

Central Yukon

Resource Management Plan

Areas of Critical Environmental Concern

Report on the Application of the
Relevance and Importance Criteria

Prepared by the
Bureau of Land Management
Central Yukon Field Office
Fairbanks, Alaska

November 2015

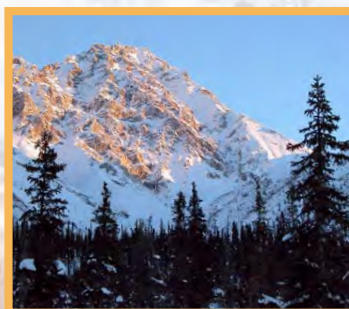


TABLE OF CONTENTS

Chapter	Page
EXECUTIVE SUMMARY	ES-1
1. INTRODUCTION	1
2. REQUIREMENTS FOR DESIGNATION	7
2.1 Areas of Critical Environmental Concern.....	7
2.1.1 Relevance.....	7
2.1.2 Importance	8
2.1.3 Special Management Attention.....	8
2.2 Research Natural Areas.....	9
3. ACEC EVALUATIONS	11
3.1 General Scoping Comments Received on the Modification or Removal of ACECs, Support for ACECs, and Other Considerations	11
3.2 Specific Scoping Comments Received on the Modification or Removal of ACECs, Support for ACECs, and Other Considerations	14
3.3 Specific ACEC Nominations and Evaluations.....	19
3.3.1 Accomplishment Creek.....	19
3.3.2 Atigun-Sagavanirktok River	21
3.3.3 Dalton Utility Corridor	23
3.3.4 Galbraith Lake ACEC.....	28
3.3.5 Nigu-Iteriak ACEC	29
3.3.6 Toolik Lake RNA (Including Expansion).....	30
3.3.7 West Fork Atigun River ACEC (Including Expansion)	33
3.3.8 Midnight Dome/Kalhabuk	34
3.3.9 Nugget Creek ACEC	36
3.3.10 Poss Mountain ACEC (Including Expansion)	37
3.3.11 Snowden Mountain ACEC (Including Expansion).....	39
3.3.12 Sukakpak Mountain ACEC (Including Expansion).....	41
3.3.13 Jim River ACEC (Including Expansion)	44
3.3.14 South Fork Koyukuk River.....	48
3.3.15 Upper Kanuti River.....	50
3.3.16 Kanuti Hot Springs ACEC.....	54
3.3.17 Upper Teedriinjik (Chandalar) River.....	55
3.3.18 Alatna River.....	58
3.3.19 Indian River ACEC (Including Expansion).....	60
3.3.20 Koyukuk River Tributaries	62
3.3.21 Lake Todatonten Pingos RNA	63
3.3.22 Mentanontli River/Lake Todatonten.....	66
3.3.23 South Todatonten Summit RNA	67
3.3.24 Hogatza River Tributaries ACEC	69
3.3.25 Klikhtentotzna Creek	72
3.3.26 Pah River	74
3.3.27 Wheeler Creek	75
3.3.28 Ishtalitna Creek Hot Springs RNA	78
3.3.29 Kanuti-Kilolitna Rivers.....	79
3.3.30 McQuesten Creek RNA	82

3.3.31	Ray Mountains (Tozitna Caribou ACECs Expansion)	85
3.3.32	Spooky Valley RNA	86
3.3.33	Tozitna River ACEC.....	89
3.3.34	Dulbi River ACEC.....	91
3.3.35	Galena Mountain Caribou ACEC (Including Expansion)	92
3.3.36	Traditional Hunting and Fishing Areas for Louden Tribe	93
3.3.37	Yukon River Watersheds	96
3.3.38	Bishop Creek	98
3.3.39	Nulato Hills ACEC	99
3.3.40	Arms Lake RNA	100
3.3.41	Redlands Lake RNA	101
3.3.42	Sethkokna River.....	103
3.3.43	Sulukna River ACEC (Including Expansion).....	105
3.3.44	Telsitna-Titna Rivers	108
4.	SUMMARY OF FINDINGS, EVALUATION PROCESS, AND NEXT STEPS	111
4.1	Summary of Findings.....	111
4.2	Evaluation Process	125
4.3	Next Steps	125
5.	LIST OF PREPARERS	127
6.	REFERENCES CITED	129

TABLES		Page
ES-1	Summary of Findings.....	ES-2
1	Existing ACECs and RNAs	2
2	ACEC Nominations, Including Expansions of Existing ACECs or RNAs.....	3
3	Summary of ACEC and RNA Evaluations	112

FIGURES (<i>see Appendix A</i>)	Page
1 Planning Area and ACEC Locator Overview	A-3
2 Existing and Nominated ACECs/RNAs – North Dalton	A-4
3 ACECs Found to Meet the Relevance and Importance Criteria – North Dalton	A-5
4 Existing and Nominated ACECs/RNAs – Middle Dalton	A-6
5 ACECs Found to Meet the Relevance and Importance Criteria – Middle Dalton	A-7
6 Existing and Nominated ACECs/RNAs – South Dalton	A-8
7 ACECs Found to Meet the Relevance and Importance Criteria – South Dalton	A-9
8 Existing and Nominated ACECs/RNAs – Indian River	A-10
9 ACECs Found to Meet the Relevance and Importance Criteria – Indian River	A-11
10 Existing and Nominated ACECs/RNAs – Hogatza	A-12
11 ACECs Found to Meet the Relevance and Importance Criteria – Hogatza	A-13
12 Existing and Nominated ACECs/RNAs – Ray Mountains	A-14
13 ACECs Found to Meet the Relevance and Importance Criteria – Ray Mountains	A-15
14 Existing and Nominated ACECs/RNAs – Dulbi Galena Wolf	A-16
15 ACECs Found to Meet the Relevance and Importance Criteria – Dulbi Galena Wolf	A-17
16 Existing and Nominated ACECs/RNAs – Lower Yukon*	A-18
17 Existing and Nominated ACECs/RNAs – Nowitna	A-19
18 ACECs Found to Meet the Relevance and Importance Criteria – Nowitna	A-20

**There are no ACECs found to meet the relevance and importance criteria in the Lower Yukon area.*

ACRONYMS AND ABBREVIATIONS

Full Phrase

ACEC	Area of Critical Environmental Concern
ADFG	Alaska Department of Fish and Game
ANILCA	Alaska National Interest Lands Conservation Act
BLM	United States Department of the Interior, Bureau of Land Management
CFR	Code of Federal Regulations
CYRMP	Central Yukon Resource Management Plan
EIS	Environmental Impact Statement
FLPMA	Federal Land Policy and Management Act
NRHP	National Register Historic Places
NWR	National Wildlife Refuge
ORV	Off-Road Vehicle
PLO	Public Land Order
RMP	Resource Management Plan
RNA	Research Natural Area
ROD	Record of Decision
TFS	Toolik Field Station
U.S.C.	United States Code
USFWS	United States Department of the Interior, Fish and Wildlife Service

EXECUTIVE SUMMARY

Introduction

During the scoping period for the Central Yukon Resource Management Plan (RMP)/Environmental Impact Statement (EIS), the U.S. Department of the Interior, Bureau of Land Management (BLM) requested public input on both existing and nominated areas of critical environmental concern (ACECs) and research natural areas (RNAs). In addition, the BLM sought public comments, nominations, and modifications, during a specific comment period on ACECs from May 1 to August 29, 2014.

In compiling a list of areas to be analyzed in this report, the BLM considered the public comments received on ACEC modifications, removals, and nominations (**Sections 3.1 and 3.2**). The BLM followed the guidance set forth in BLM Manual 1613 and considered:

- Existing ACECs and RNAs
- Areas recommended for ACEC consideration (internal and external nominations)
- Areas identified through inventory and monitoring
- Adjacent designations of other federal and state agencies

Requirements for Designation

To be eligible for designation as an ACEC, an area must meet the relevance and importance criteria described in 43 Code of Federal Regulations (CFR) 1610.7-2 and BLM Manual 1613, and need special management. The determinations in this report deal strictly with the relevance and importance criteria, and not special management attention. The ACECs that meet both the relevance and importance criteria will be carried forward and further analyzed in the Draft RMP/EIS, where special management will be addressed.

Relevance and importance are defined as follows:

- **Relevance:** There shall be present a significant historic, cultural, or scenic value, a fish or wildlife resource or other natural system or process, or natural hazard.

- Importance: The above described value, resource, system, process, or hazard shall have substantial significance and value, which generally requires qualities of more than local significance and special worth, consequence, meaning, distinctiveness, or cause for concern. A natural hazard can be important if it is a significant threat to life or property.

RNAs are established and maintained for the purpose of research and education because the land has one or more of the following characteristics (43 CFR 8223):

- A typical representation of a common plant or animal association.
- An unusual plant or animal association.
- A threatened or endangered plant or animal species.
- A typical representation of common geologic, soil, or water features.
- Outstanding or unusual geologic, soil, or water features.

Findings

The following table summarizes the findings for each existing and nominated area. See **Table 3** in **Chapter 4** for more details. See also **Appendix A** for figures.

Table ES-1
Summary of Findings

Name/Area	Existing or Nominated	Meets ACEC Criteria	Meets RNA Criteria	Existing Size (acres)	Nominated Size (acres)	Acres Carried Forward for Analysis in EIS
Accomplishment Creek	Nominated	Yes: soil, water, and fish/riparian	N/A	0	41,000 (Figure 2)	41,000 (Figure 3)
Alatna River	Nominated	Yes: soil, water, and fish/riparian	N/A	0	5,500 (Figure 8)	5,500 (Figure 9)
Arms Lake RNA	Existing	Yes: soil and vegetation	Yes	10,600 (Figure 17)	10,600 (Figure 17)	10,600 (Figure 18)
Atigun-Sagavanirktok River	Nominated	Partially	N/A	0	105,000 (Figure 2)	0 (41,000 acres overlap Accomplishment Creek, 29,200 acres overlap Toolik Lake RNA and expansion)
Bishop Creek	Nominated	No	N/A	0	16,200 (Figure 16)	0
Dalton Utility Corridor	Nominated	Partially	N/A	0	699,000 (Figures 2, 4, and 6)	0 (288,000 acres overlap with multiple ACECs)

Table ES-1
Summary of Findings

Name/Area	Existing or Nominated	Meets ACEC Criteria	Meets RNA Criteria	Existing Size (acres)	Nominated Size (acres)	Acres Carried Forward for Analysis in EIS
Dulbi River ACEC	Existing	Yes: wildlife	N/A	54,300 (Figure 14)	54,300 (Figure 14)	0 (11,700 acres overlap Galena Mountain Caribou ACEC)
Galbraith Lake ACEC	Existing	Yes: wildlife	N/A	53,900 (Figure 2)	53,900 (Figure 2)	53,900 (Figure 3)
Galena Mountain Caribou ACEC	Existing and Nominated Expansion	Yes: wildlife	N/A	19,400 (Figure 14)	671,000 (Figure 14)	507,000 (Figure 15)
Hogatza River Tributaries ACEC	Existing and Nominated Expansion	Yes: soil, water, and fish/riparian	N/A	5,200 (Figure 10)	62,000 (Figure 10)	60,000 (Figure 11)
Indian River ACEC	Existing	Yes: soil, water, and fish/riparian	N/A	158,000 (Figure 8)	176,000 (Figure 8)	176,000 (Figure 9)
Ishtalitna Creek Hot Springs RNA	Existing	Yes: soil, water, and vegetation	Yes	1,000 (Figure 12)	1,000 (Figure 12)	1,100 (Figure 13)
Jim River ACEC	Existing and Nominated Expansion	Yes: soil, water, fish/riparian, wildlife, and cultural	N/A	203,000 (Figure 6)	476,000 (Figure 6)	303,000 (Figure 7)
Kanuti Hot Springs ACEC	Existing	Yes: soil and water	N/A	40 (Figure 6)	40 (Figure 6)	40 (Figure 7)
Kanuti-Kilolitna Rivers	Nominated	Yes: wildlife	N/A	0	266,000 (Figure 12)	0 (264,000 acres overlap Ray Mountains, 1,100 acres overlap Ishtalitna Creek Hot Springs RNA)
Klikhtentotzna Creek	Nominated	Yes: soil, water, and fish/riparian	N/A	0	108,000 (Figure 10)	108,000 (Figure 11)
Koyukuk River Tributaries	Nominated	No	N/A	0	174,000 (Figures 8, 10, and 16)	0 (14,100 acres overlap Indian River ACEC and expansion)
Lake Todatonten Pingos RNA	Existing	Yes: soil, water, and vegetation	Yes, if combined with others	660 (Figure 8)	660 (Figure 8)	660 (Figure 9)

Table ES-1
Summary of Findings

Name/Area	Existing or Nominated	Meets ACEC Criteria	Meets RNA Criteria	Existing Size (acres)	Nominated Size (acres)	Acres Carried Forward for Analysis in EIS
McQuesten Creek RNA	Existing	Yes: soil, water, and vegetation	Yes	3,900 (Figure 12)	3,900 (Figure 12)	3,900 (Figure 13)
Mentanontli River/Lake Todatonten	Nominated	Yes: fish/riparian	N/A	0	22,000 (Figure 8)	22,000 (Figure 9)
Midnight Dome/Kalhabuk	Nominated	Yes: soil and wildlife	N/A	0	10,000 (Figure 4)	10,000 (Figure 5)
Nigu-Iteriak ACEC	Existing	No	N/A	40,200 (Figure 2)	40,200 (Figure 2)	0
Nugget Creek ACEC	Existing	Yes: soil and wildlife	N/A	3,300 (Figure 4)	3,300 (Figure 4)	3,300 (Figure 5)
Nulato Hills ACEC	Existing	No	N/A	40,700 (Figure 16)	40,700 (Figure 16)	0
Pah River	Nominated	No	N/A	0	50,600 (Figure 10)	0
Poss Mountain ACEC	Existing and Nominated Expansion	Yes: soil and wildlife	N/A	8,700 (Figure 4)	25,500 (Figure 4)	25,500 (Figure 5)
Ray Mountains	Existing and Nominated Expansion	Yes: wildlife	N/A	129,000 (Tozitna Subunit North) and 62,600 (Tozitna Subunit South) (Figure 12)	938,000 (Figure 12)	1,540,000 (Figure 13)
Redlands Lake RNA	Existing	Yes: soil and vegetation	Yes	3,800 (Figure 17)	3,800 (Figure 17)	3,800 (Figure 18)
Sethkokna River	Nominated	Yes: soil, water, and fish/riparian	N/A	0	319,000 (Figure 17)	299,000 (Figure 18)
Snowden Mountain ACEC	Existing and Nominated Expansion	Yes: soil, wildlife, and geology	N/A	29,700 (Figure 4)	102,000 (Figure 4)	0 (102,000 acres overlap Sukakpak Mountain ACEC)
South Fork Koyukuk River	Nominated	Yes: soil, water, and fish/riparian	N/A	0	417,000 (Figure 6)	415,000 (Figure 7)
South Todatonten Summit RNA	Existing	Yes: soil, water, and vegetation	Yes	660 (Figure 8)	660 (Figure 8)	660 (Figure 9)

Table ES-1
Summary of Findings

Name/Area	Existing or Nominated	Meets ACEC Criteria	Meets RNA Criteria	Existing Size (acres)	Nominated Size (acres)	Acres Carried Forward for Analysis in EIS
Spooky Valley RNA	Existing	Yes: wildlife, vegetation	Yes	10,100 (Figure 12)	10,100 (Figure 12)	8,800 (Figure 13)
Sukakpak Mountain ACEC	Existing and Nominated Expansion	Yes: geology and scenic	N/A	3,500 (Figure 4)	18,700 (Figure 4)	125,000 (Figure 5)
Sulukna River ACEC	Existing and Nominated Expansion	Yes: soil, water, fish/riparian, and wildlife	N/A	24,600 (Figure 17)	405,000 (Figure 17)	398,000 (Figure 18)
Telsitna-Titna Rivers	Nominated	No	N/A	0	27,900 (Figure 17)	0
Toolik Lake RNA	Existing and Nominated Expansion	Yes: special status species and vegetation	Yes	77,200 (Figure 2)	108,000 (Figure 2)	106,000 (Figure 3)
Tozitna River ACEC	Existing	Yes: soil, water, fish/riparian, and wildlife	N/A	843,000 (Figure 12)	843,000 (Figure 12)	0 (838,000 acres overlap Ray Mountains)
Traditional Hunting and Fishing Areas for Louden Tribe	Nominated	No	N/A	0	43,100 (Figures 14 and 16)	0 (5,500 acres overlap Galena Mountain Caribou ACEC and expansion)
Upper Kanuti River	Nominated	Partially	N/A	0	232,000 (Figure 6)	975,000 (Figure 7)
Upper Teedriinjik (Chandalar) River	Nominated	Yes: soil, water, and fish/riparian	N/A	0	295,000 (Figure 6)	296,000 (Figure 7)
West Fork Atigun River ACEC	Existing and Nominated Expansion	Yes: soil and wildlife	N/A	9,200 (Figure 2)	33,500 (Figure 2)	33,500 (Figure 3)
Wheeler Creek	Nominated	Yes: soil, water, and fish/riparian	N/A	0	147,000 (Figure 10)	145,000 (excludes nominated lands outside the watershed) (Figure 11)
Yukon River Watersheds	Nominated	No	N/A	0	78,200 (Figures 14 and 16)	0

This page intentionally left blank.

CHAPTER 1

INTRODUCTION

The scoping period for the Central Yukon Resource Management Plan (CYRMP)/Environmental Impact Statement (EIS) was from June 14, 2013, to January 17, 2014. During this period, the U.S. Department of the Interior, Bureau of Land Management (BLM) presented summaries of existing and nominated areas of critical environmental concern (ACECs), described criteria for ACEC qualification, and requested public input on existing and nominated ACECs. In addition, the BLM sought public comments, nominations, and modifications during a specific comment period on ACECs, from May 1 to August 29, 2014. The BLM received numerous nominations for new ACECs and expansions of existing ACECs as a result of these outreach efforts.

The Central Yukon interdisciplinary team members reviewed all ACEC nominations and BLM-managed lands in the planning area to determine whether any areas should be considered for designation as an ACEC. Team members also reviewed all existing ACECs and research natural areas (RNAs) to determine if the designations are still relevant. The Federal Land Policy and Management Act (FLPMA) requires priority be given to the designation and protection of ACECs. The FLPMA defines ACECs as “areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources or other natural systems or processes, or to protect life and safety from natural hazards.”

The ACEC relevance and importance criteria has been analyzed in accordance with FLPMA Section 202(c)(3) (43 U.S. Code [U.S.C.] 1712), 43 Code of Federal Regulations (CFR) 1610.7-2, and BLM Manual 1613, *Areas of Critical Environmental Concern*. All existing and nominated ACECs were treated similarly in the evaluations of relevance and importance; there was no deference given to one over another (see **Table 1**, Existing ACECs and RNAs, and **Table 2**, ACEC Nominations, Including Expansions of Existing ACECs or RNAs, and **Figure 2**, Existing and Nominated ACECs/RNAs – North Dalton, **Figure 4**, Existing and Nominated ACECs/RNAs – Middle Dalton, **Figure 6**, Existing and Nominated ACECs/RNAs – South Dalton, **Figure 8**, Existing and Nominated ACECs/RNAs – Indian River, **Figure 10**, Existing and Nominated ACECs/RNAs – Hogatza, **Figure 12**, Existing and Nominated ACECs/RNAs – Ray Mountains,

Figure 14, Existing and Nominated ACECs/RNAs – Dulbi Galena Wolf, **Figure 16**, Existing and Nominated ACECs/RNAs – Lower Yukon, and **Figure 17**, Existing and Nominated ACECs/RNAs – Nowitna, in **Appendix A**).

The purpose of this report is to summarize the findings of the evaluations, list those areas that meet relevance and importance criteria and thus will be considered during resource management plan (RMP) alternatives development as potential ACECs, and identify those areas that do not meet relevance and importance criteria and thus will not be considered further.

Table 1
Existing ACECs and RNAs

Land Use Plan	ACEC or RNA Name	Size (Acres)	Reason for Designation
CYRMP (1986)	Arms Lake RNA (Figure 17)	10,600	Sand dune complex and associated vegetation and limnologic characteristics
CYRMP (1986)	Dulbi River ACEC (Figure 14)	54,300	Crucial peregrine falcon habitat
Utility Corridor RMP/EIS (1991)	Galbraith Lake ACEC (Figure 2)	53,900	Cultural resources, rare or sensitive plants, high scenic values, and crucial Dall sheep lambing areas
CYRMP (1986)	Galena Mountain Caribou ACEC (Figure 14)	19,400	Crucial peregrine falcon habitat, caribou calving grounds
CYRMP (1986)	Hogatza River Tributaries ACEC (Figure 10)	5,200	Crucial salmon spawning habitat
CYRMP (1986)	Indian River ACEC (Figure 8)	158,000	Crucial salmon spawning habitat
CYRMP (1986)	Ishtalitna Creek Hot Springs RNA (Figure 12)	1,000	Low-gradient hot springs system
Utility Corridor RMP/EIS (1991)	Jim River ACEC (Figure 6)	203,000	Crucial salmon spawning habitat, recreational fishery, cultural resources, and high scenic values
Utility Corridor RMP/EIS (1991)	Kanuti Hot Springs ACEC (Figure 6)	40	Hot springs system
CYRMP (1986)	Lake Todatonten Pingos RNA (Figure 8)	660	Geologic features: open system pingos ¹
CYRMP (1986)	McQuesten Creek RNA (Figure 12)	3,900	Low-gradient hot springs system; geologic features: stone stripes and surface slumps
Utility Corridor RMP/EIS (1991)	Nigu-Iteriak ACEC (Figure 2)	40,200	Geology, cultural resources
Utility Corridor RMP/EIS (1991)	Nugget Creek ACEC (Figure 4)	3,300	Crucial Dall sheep lambing areas, mineral lick
CYRMP (1986)	Nulato Hills ACEC (Figure 16)	40,700	Crucial peregrine falcon habitat
Utility Corridor RMP/EIS (1991)	Poss Mountain ACEC (Figure 4)	8,700	Crucial Dall sheep lambing areas, mineral lick
CYRMP (1986)	Redlands Lake RNA (Figure 17)	3,800	Remnant lake and sand dune complex

¹ A mounded layer of soil over a large core of ice; found in permafrost areas

Table 1
Existing ACECs and RNAs

Land Use Plan	ACEC or RNA Name	Size (Acres)	Reason for Designation
Utility Corridor RMP/EIS (1991)	Snowden Mountain ACEC (Figure 4)	29,700	Crucial Dall sheep lambing areas, mineral lick
CYRMP (1986)	South Todatonten Summit RNA (Figure 8)	660	Geologic features: open system pingos
CYRMP (1986)	Spooky Valley RNA (Figure 12)	10,100	Geologic, physiographic, vegetation, and scenic
Utility Corridor RMP/EIS (1991)	Sukakpak Mountain ACEC (Figure 4)	3,500	High scenic values, geology
CYRMP (1986)	Sulukna River ACEC (Figure 17)	24,600	Crucial salmon and sheefish (inconnu) spawning habitat
Utility Corridor RMP/EIS (1991)	Toolik Lake RNA (Figure 2)	77,200	Research activities
CYRMP (1986)	Tozitna River ACEC (Figure 12)	843,000	Crucial salmon spawning habitat
CYRMP (1986)	Tozitna Subunit North ACEC (Figure 12)	129,000	Crucial caribou calving habitat
CYRMP (1986)	Tozitna Subunit South ACEC (Figure 12)	62,600	Crucial caribou calving habitat
Utility Corridor RMP/EIS (1991)	West Fork Atigun River ACEC (Figure 2)	9,200	Crucial Dall sheep lambing areas, mineral lick

Table 2
ACEC Nominations, Including Expansions of Existing ACECs or RNAs

ACEC Name or General Location	Proposed Size (acres)	Nominated By	Reasons Provided for Nomination by Nominator(s)
Accomplishment Creek (Figure 2)	41,000	BLM	Crucial Dolly Varden overwintering habitat.
Alatna River (Figure 8)	5,500	U.S. Fish and Wildlife Service (USFWS)	Crucial whitefish spawning habitat supporting the main subsistence fishery resources for villages in the Upper Koyukuk River. Only documented spawning area in upper Koyukuk drainage for sheefish (inconnu) and broad white fish.
Atigun-Sagavanirktok River (Figure 2)	105,000	USFWS	Scenic values; geology; paleontological resources; Dall sheep lambing habitat and mineral licks.
Bishop Creek (Figure 16)	16,200	Koyukuk Tribal Council, Loudon Tribal Council	Traditional harvest lands and waters used by the Koyukon people; cultural and historical significance of the area to Koyukon people; ecological processes that support traditional harvest practices.
Dalton Utility Corridor (Figures 2, 4, and 6)	699,000	The Schoppenhorsts	Migratory routes for resident wildlife populations, fish habitat, unique geological features, natural hazard areas, and high scenic value.
Galena Mountain Caribou ACEC Expansion (Figure 14)	671,000	BLM	Crucial habitat for the Galena Mountain Caribou Herd. Expand this area to include more habitat.

Table 2
ACEC Nominations, Including Expansions of Existing ACECs or RNAs

ACEC Name or General Location	Proposed Size (acres)	Nominated By	Reasons Provided for Nomination by Nominator(s)
Hogatza River Tributaries ACEC Expansion (Figure 10)	62,000	BLM	Crucial summer chum spawning habitat. Adjust current boundary of the Hogatza River Tributaries ACEC to include all BLM-managed lands within the combined watersheds of Clear and Caribou creeks as well as in High Creek and the South Hogatza sub-watershed.
Indian River ACEC Expansion (Figure 8)	176,000	BLM	Crucial Chinook and summer chum salmon spawning habitat. Adjust ACEC boundary to include spawning habitat downstream of current boundary.
Jim River ACEC Expansion (Figure 6)	476,000	Allakaket, BLM	Crucial Chinook and chum spawning habitat and overwintering habitat for resident fish.
Kanuti-Kilolitna Rivers (Figure 12)	266,000	USFWS	Cultural resources; historical territory to three tribal bands of aboriginal Alaska Natives; sensitive or rare plants; Hodzana Caribou Herd habitat; rare or undescribed floral communities; geology.
Klikhtentotzna Creek (Figure 10)	108,000	BLM	Crucial summer chum salmon spawning habitat.
Koyukuk River Tributaries (Figures 8, 10, and 16)	174,000	Koyukuk Tribal Council	Traditional harvest lands and waters used by the Koyukon people; cultural and historical significance of the area to Koyukon people; ecological processes that support traditional harvest practices.
Mentanontli River/ Lake Todatonten (Figure 8)	22,000	USFWS	Wildlife and waterfowl habitat; crucial feeding habitat for humpback whitefish; whitefish migration route.
Midnight Dome/ Kalhabuk (Figure 4)	10,000	Mr. Reakoff	Crucial Dall sheep habitat and mineral lick; Dall sheep movement corridor.
Pah River (Figure 10)	50,600	Ambler Native Village	Cultural importance to Upper Kobuk River communities; crucial sheefish (inconnu) and chum spawning habitat; genetically unique sheefish (inconnu) population; Western Arctic Caribou Herd migration route; waterfowl habitat; unique wetlands.
Poss Mountain ACEC Expansion (Figure 4)	25,500	BLM	Crucial lambing habitat for Dall sheep and known mineral licks.
Ray Mountains (Tozitna Caribou ACECs Expansion) (Figure 12)	938,000	BLM	Crucial calving habitat for the Ray Mountains Caribou Herd; combine existing Tozitna caribou ACECs and rename as the Ray Mountains ACEC.
Sethkokna River (Figure 17)	319,000	BLM	Crucial Chinook salmon spawning habitat.
Snowden Mountain ACEC Expansion (Figure 4)	102,000	BLM	Crucial Dall sheep habitat, mineral licks, and unique geological exposures and associated paleontology. This area includes Nutirwik Creek, which is noted for its high scenic values.
South Fork Koyukuk River (Figure 6)	417,000	BLM	Crucial Chinook and chum salmon spawning habitat.

Table 2
ACEC Nominations, Including Expansions of Existing ACECs or RNAs

ACEC Name or General Location	Proposed Size (acres)	Nominated By	Reasons Provided for Nomination by Nominator(s)
Sukakpak Mountain ACEC Expansion (Figure 4)	18,700	BLM	Unique geologic structures, folds, and faults; view of the geologic process of mountain building and erosional forces; rare plant species; and outstanding scenic views along the Dalton Highway, including Dillon Mountain.
Sulukna River ACEC Expansion (Figure 17)	405,000	USFWS, BLM	Crucial spawning and rearing habitat for sheefish (iconnu); preserve water quality in the Nowitna National Wildlife Refuge (NWR). Adjust current boundary to include spawning habitat upstream of the current ACEC.
Telsitna-Titna Rivers (Figure 17)	27,900	USFWS	Crucial spawning and rearing habitat for Chinook salmon; primary producer of Chinook within the Nowitna River drainage; preserve water quality in the Nowitna NWR.
Toolik Lake RNA Expansion (Figure 2)	108,000	Toolik Field Station Management Committee	High value research station supporting more than 14,000 scientific research plots near Toolik Field Station (TFS). The area around TFS is the arctic site for the National Ecological Observatory Network.
Traditional Hunting and Fishing Areas for Loudon Tribe (Figures 14 and 16)	43,100	Louden Tribal Council	Traditional harvest lands and waters used by the Koyukon people; cultural and historical significance of the area to Koyukon people; ecological processes that support traditional harvest practices.
Upper Kanuti River (Figure 6)	232,000	USFWS	Cultural resources; historical territory to three tribal bands of aboriginal Alaska Natives; sensitive or rare plants; Hodzana Caribou Herd habitat; rare or undescribed floral communities; geology.
Upper Teedriinjik (Chandalar) River ² (Figure 6)	295,000	USFWS, BLM, Mr. Gilbert	Crucial habitat for Chinook, summer and fall chum, coho, whitefish, and cisco; likely area of cultural significance; high-value cultural resource for Alaska Natives.
Wheeler Creek (Figure 10)	147,000	BLM, USFWS	Crucial summer chum salmon spawning habitat.
Yukon River Watersheds (Figures 14 and 16)	104,000	Koyukuk Tribal Council	Traditional harvest lands and waters used by the Koyukon people; cultural and historical significance of the area to Koyukon people; ecological processes that support traditional harvest practices.

² In September 2015, the U.S. Board of Geographic Names changed the name of the Chandalar River to the Teedriinjik River to recognize its native name. This document refers to the former Chandalar River as the Teedriinjik (Chandalar) River.

This page intentionally left blank.

CHAPTER 2

REQUIREMENTS FOR DESIGNATION

2.1 AREAS OF CRITICAL ENVIRONMENTAL CONCERN

To be eligible for designation as an ACEC, an area must meet the relevance and importance criteria described in 43 CFR 1610.7-2 and BLM Manual 1613, *and* it must require special management. The determinations in this report deal strictly with the relevance and importance criteria and not special management attention. The ACECs that meet both the relevance and importance criteria will be carried forward and further analyzed in the Draft RMP/EIS, where special management will be addressed.

Relevance and importance are defined as follows:

- **Relevance**—There shall be present a significant historic, cultural, or scenic value, a fish or wildlife resource or other natural system or process, or natural hazard.
- **Importance**—The above-described value, resource, system, process, or hazard shall have substantial significance and value, which generally requires qualities of more than local significance and special worth, consequence, meaning, distinctiveness, or cause for concern. A natural hazard can be important if it is a significant threat to life or property.

2.1.1 Relevance

An area meets the relevance criterion if it contains one or more of the following:

- A significant historic, cultural, or scenic value (including but not limited to rare or sensitive archeological resources and religious or cultural resources important to Native Americans).
- A fish and wildlife resource (including but not limited to habitat for endangered, sensitive, or threatened species or habitat essential for maintaining species diversity).
- A natural process or system (including but not limited to endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities that are terrestrial, aquatic, or riparian; or rare geological features).

- Natural hazards (including but not limited to areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs). A hazard caused by human action might meet the relevance criteria if it is determined through the resource management planning process to have become part of a natural process.

2.1.2 Importance

An area meets the importance criterion if it meets one or more of the following:

- Has more than locally significant qualities that give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource.
- Has qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change.
- Has been recognized as warranting protection to satisfy national priority concerns or to carry out the mandates of FLPMA.
- Has qualities that warrant highlighting to satisfy public or management concerns about safety and public welfare.
- Poses a significant threat to human life and safety or to property.

2.1.3 Special Management Attention

This report does not address special management; special management will be addressed for those ACECs that are recommended for further analysis in the Draft RMP/EIS. Special management attention refers to “management prescriptions developed during preparation of an RMP or amendment expressly to protect the important and relevant values of an area from the potential effects of actions permitted by the RMP, including proposed actions deemed to be in conformance with the terms, conditions, and decisions of the RMP” (BLM Manual 1613.12). Thus, these are management measures that would not be necessary and prescribed if the relevant and important values were not present.

A management prescription is considered special if it is unique in the area involved and includes terms and conditions specifically to protect the values found in the area. BLM Manual 1613 includes the following guidance on incorporating management prescriptions for potential ACECs into appropriate alternatives:

During the formulation of alternatives, management prescriptions for potential ACECs are fully developed. Management prescriptions will generally vary across the plan alternatives. If there is no controversy or issues raised regarding the management of a potential ACEC, it may not be necessary to develop a range of management alternatives. In other words, management prescriptions may not vary significantly across alternatives. A potential ACEC (or portion thereof) must be shown as recommended for designation in any or all alternatives in the Draft RMP in which special management attention is prescribed to protect the resource or to minimize hazard to human life and safety. Because special management attention must be prescribed in at least one plan alternative, each potential ACEC will appear as a recommended ACEC in at least one plan alternative. (BLM Manual 1613.22.B)

Designation is based on whether or not a potential ACEC requires special management attention in the selected plan alternative (i.e., proposed RMP; BLM Manual 1613.23).

2.2 RESEARCH NATURAL AREAS

RNAs are established and maintained for the purpose of research and education because the land has one or more of the following characteristics (43 CFR 8223):

1. A typical representation of a common plant or animal association
2. An unusual plant or animal association
3. A threatened or endangered plant or animal species
4. A typical representation of common geologic, soil, or water features
5. Outstanding or unusual geologic, soil, or water features

Per BLM Manual 1613.53, existing RNAs and proposed expansions were evaluated using the ACEC relevance and importance criteria and the RNA criteria defined in 43 CFR 8223. RNAs that do not meet the relevance and importance criteria for ACEC designation may still be considered for RNA designation in the revised RMP.

This page intentionally left blank.

CHAPTER 3

ACEC EVALUATIONS

3.1 GENERAL SCOPING COMMENTS RECEIVED ON THE MODIFICATION OR REMOVAL OF ACECS, SUPPORT FOR ACECS, AND OTHER CONSIDERATIONS

The BLM needs to strongly consider closing ACECs to mineral location. Some areas currently designated as ACECs are open to mineral location under the General Mining Act of 1872 (Central Yukon RMP p. 20). Entry should be prohibited in order to maintain the other uses that currently take place in those ACECs.
The RMP should not propose the designation of any new ACECs that would occupy lands selected by Doyon under the Alaska Native Claims Settlement Act or surround lands that already have been conveyed to Doyon. Such areas are unlikely to meet the regulatory criteria for designation of ACECs. Areas under consideration for ACEC designation that contain substantial areas of land that are in the process of conveyance or are high priority Doyon, Limited, and State-selected lands are unlikely to be retained in federal land status and ACEC designation is inappropriate.
The peregrine falcon was provided habitat protection in several existing ACECs due to its threatened species listing. These protections have made a difference for this species. Existing protections should not be removed to allow for mining or oil and gas surface disturbing activities. Other raptors may also use riparian cliff areas and adjacent hunting grounds used by nesting peregrine falcons, and other riparian species may be protected by the existing ACECs.
The BLM should consider these goals for ACECs: 1) Identify the resources and support necessary to promote and maintain the wild, scenic and scientific qualities of ACECs; 2) Identify (further) rehabilitation and reclamation needs within the ACECs; 3) Develop management objectives that protect and enhance the resource values, including prohibiting activities that would degrade the qualities of current and potential designations; 4) Close all designated ACECs to mineral development; 5) Designate wildlife corridors as ACECs with strong protections; and 6) Prohibit road development within RNAs and ACECs off the Dalton Highway.
The RMP must evaluate a range of alternatives including ACEC designations to protect sensitive and important resources in the planning area and should establish robust management prescriptions to ensure real protection for the resources which ACECs are designated to protect.
ACECs should be established to provide real protections for near-shore rearing habitat for fingerling and smolt.
The BLM should consider designating corridors between conservation units as ACECs to protect the outstanding qualities of these areas as well as to promote connectivity between other units.
Depending on the realities of current land status, the BLM should retain all existing ACECs in the planning area and expand and improve management prescriptions to protect these important places. Keeping these special areas closed to mineral development is a high priority.

RNAs need to be an adequate size to protect the integrity of the system. The BLM should review the success of current RNA management related to the size of these areas to determine if the originally proposed areas are serving their true purpose.
The BLM should analyze if all hot springs should be designated as RNAs as hot springs host unique vegetation communities in the Arctic and Subarctic.
The resources in the planning area include many values that merit protection through special administrative designations. Protection of existing ACECs and due consideration of newly-proposed ACECs, RNAs and outstanding natural areas, must be a priority in the Central Yukon planning process.
ACEC nominations should not be done through a separate "call for nominations." The identification of new ACECs should be a product of the BLM's integrated planning effort following detailed resource inventories, data review, and analysis. The plan should identify all of the resources in the area being considered for ACEC designation and determine if the ACEC designation is appropriate to achieve the management objectives for the specific area. The planning effort should not start out by pre-determining that certain areas deserve a higher level of protection before management objectives have been established. The Relevance and Importance criteria, which must be met to qualify for ACEC designation should be reviewed in light of the resources of the entire planning area and not as individual areas. This review can only be adequately performed after the completion of planning related inventories and data review, including mineral inventories and assessments.
Requesting nominations for new ACECs early in the planning process compromises the BLM's mandates to provide for a full range of multiple use opportunities on public lands and biases the process towards further land use restrictions and closures.
The BLM's May 1, 2014 Call for Nominations and related press release inaccurately describe the current step in the process as the request was only for "nominations" for ACECs. As part of any nomination process, the BLM should also request comments on existing ACECs. Revised ACEC designations need to reflect new knowledge about resources values, and consider changes to laws and regulations regarding mining and other land uses that have occurred since the existing plans were developed.
There are significant inconsistencies in the BLM's approach to ACEC and RNA designations between plans. Some recent BLM plans use a very conservative approach when delineating ACECs while others do not. For example, the East Alaska and Bay RMPs designated only one ACEC each. Conversely, the existing Central Yukon plan designated 24 ACECs and RNAs, covering almost half the planning area. It does not appear that the environmental resources within the Central Yukon Planning Area are correspondingly that more "critical" or significant than those found in other planning areas. Rather it appears this is due to a lack of consistent criteria used in different planning areas, by different planning staff, and the relatively ambiguous criteria for ACEC designation. Another example is the designation of thirteen ACECs for fisheries and five ACECs for salt licks within the Central Yukon planning area. Many other BLM-managed lands have similar fisheries values and salt licks; yet statewide the BLM has identified ACECs for fisheries in only four other areas (three in Kobuk-Seward RMP and one in the Southwest Management Framework Plan (Anvik River), and no ACECs for salt licks. The BLM has apparently concluded that on BLM-managed lands outside the Central Yukon plan area, existing regulations provide adequate protection for these resources.
The guidance provided in BLM Manual 1613 is too vague, open ended, and broad, resulting in an inconsistent approach to ACEC designation between planning areas. Based on this guidance, it appears that many of the Central Yukon ACECs do not meet the importance criteria as many of the streams designated seem to be important locally, but not on a regional or statewide basis.
The RMP should encourage multiple use, emphasize that mineral development under today's regulations can be performed in an environmentally safe manner (as demonstrated by Taiga Mining Company operations for the past 24 years), and only propose ACEC or RNA designation in areas that clearly require a higher level of protection than provided by existing regulations. The re-write of the 43 CFR 3809 Regulations in 2001, along with new requirements from other agencies such as Alaska's Title 16 Authorities protecting salmon, and tightened water quality standards have put many new stringent requirements on Alaskan miners today. The protection these new standards provide, such as stream buffers and stream reclamation, should be considered prior to ACEC designation.

Land transfers under the Statehood Act and the Alaska Native Claims Settlement Act have significantly reduced the land area under BLM management of many ACECs, making them no longer appropriate for ACEC designation. As many as 10 of the 25 ACECs in the planning area have had significant reductions in the acreage of land managed by the BLM. Where significant portions of the ACEC are no longer under BLM jurisdiction, the ACEC designations no longer apply and should be eliminated or, if ACEC designation of the remaining BLM-managed lands is determined appropriate, it should be reduced to only those areas remaining under exclusive BLM control.
The BLM should not encumber the land with protective designations on lands they do not administer, even if the ACEC has no legal authority over the non-federal lands.
Prior land management plans called for leaving many ACECs open to mineral location. However, the BLM has kept many of these areas closed. Mining can be compatible with most ACEC designations and ACEC lands should be open to mineral location and entry under federal mining laws and to the sale of federally owned minerals, including oil and gas and coal resources. If the BLM finds it appropriate to maintain some of the existing ACECs or designate new ones, leaving them open to mineral entry with reasonable environmental protections can reduce the economic impact of designation.
All ACECs should be reviewed with consideration given to federal lands already designated as Conservation System Units under the ANILCA [Alaska National Interest Lands Conservation Act]. Within the boundary of the planning area there are three NWRs representing a significant acreage. The area borders four additional NWRs and two National Parks all removed from multiple use management. These conservation system units represent many different types of ecosystems and resources of interior Alaska. These resources should be considered prior to establishing new, or maintaining existing, ACECs.
Discussion and proposed management of ACECs should not consider mineral resource development a “threat.” The BLM is charged by the FLPMA with managing federal public lands for multiple use, including specifically mineral resources. References to mineral resources within the existing planning documents repeatedly refer to mineral resource potential as a “concern” or a “threat” to their intended management. This language is found primarily in the five step-down management plans prepared by the Kobuk District between 1988 and 1995 for specific ACECs. Multiple use management requires that the BLM allow for access to mineral resources and opportunities for future mineral development, mining related activities should not be viewed as a “threat” to other resources.
Prior to considering new ACECs the BLM should review all existing ACECs to determine if they meet the relevance and importance criteria and if designation is still justified. Of the 25 existing ACECs within the planning area only seven have ACEC management plans. If only seven of these 25 ACECs required preparation of their own management plans, it is questionable if the areas actually meet the Relevance and Importance criteria.
The costs to the government of ACEC management should be considered when reviewing existing and new ACECs. ACEC designation can have serious budget implications for the BLM and result in agency directed mandates that are expensive and may not be met. The BLM prepared the Hogatza ACEC Aquatic Management Plan and subsequently embarked on a very intensive aquatic and hydrologic inventory and monitoring scheme spanning 15 to 18 years. While this work was likely undertaken to meet the objectives of the management plan, no reports, data summaries, or ACEC status reports were ever made available to Taiga Mining. To our knowledge reports of this nature were never prepared, including the annual reporting required under the management plan. Consequently, it is questionable if these undocumented data collection efforts were an appropriate expenditure of federal tax dollars.
The BLM should explain that the public and tribes can propose an ACEC through the planning process because areas are important special places, culturally valued, critical for subsistence, historic, or special biological habitats. Commenters noted that ACECs in the planning area are working and being managed well and that they can be expanded with input from the public and tribes to achieve their purposes.
If an ACEC achieved the purpose it was established for, it may no longer be needed (for example, protecting a species that is no longer protected by legislation).
The RMP should explain what an RNA is and how they are designated and used.

The BLM needs to manage access issues on ACECs. Some lands users are unaware that an area is an ACEC and use Argos/ATVs [all-terrain vehicles]/ORVs [off-road vehicles] in critical spawning areas. The RMP should describe and evaluate access issues and implications of misuse.

3.2 SPECIFIC SCOPING COMMENTS RECEIVED ON THE MODIFICATION OR REMOVAL OF ACECs, SUPPORT FOR ACECs, AND OTHER CONSIDERATIONS

Analyze the upper Teedriinjik (Chandalar) River for designation as an ACEC, from the East Fork Chandalar River/Chuttoh Bluffs to Caro. The Teedriinjik (Chandalar) River drainage provides essential fisheries habitat for Chinook, summer and fall chum, coho, whitefish, and cisco (Brown et al. 2012, Melegari 2012, Rost 1986), and critical subsistence resources for all Alaska communities which harvest fish from the Yukon River. Radio-telemetry data suggest that the Teedriinjik (Chandalar) River contributes 2 to 4 percent of the statewide run of Chinook that enter the Yukon River annually (Eiler et al. 2006a, 2006b). Radio-telemetry data (Martin 2013, unpublished data) collected in 2003 and 2004 documents spawning Chinook present in the Teedriinjik (Chandalar) River from Venetie upstream to the East Fork, main stem, and West Fork (Martin 2013). With one-third of the entire Yukon River fall chum salmon population utilizing the Teedriinjik (Chandalar) River, this discrete population is the largest fall chum population of the Yukon River drainage and provides an essential food source for users throughout the Yukon River basin and a primary resource for Arctic Village, Venetie and Fort Yukon. ADFG [Alaska Department of Fish and Game] subsistence harvest data reported the community of Venetie reported harvesting 1,938 fall chum, 10 chinook and 34 coho in 2011. The physical attributes which make the Teedriinjik (Chandalar) River productive fisheries habitat are understudied but it is suspected that a combination of upriver water upwelling and other physical features contribute to its high fisheries production.

Presently there are increased mining activities in the upper Teedriinjik (Chandalar) watershed which pose a threat for water quality and downstream fisheries spawning habitats. The USFWS is specifically concerned about that stretch of the Teedriinjik (Chandalar) River upstream from the East Fork/Chuttoh Bluffs to Caro and proposes that this area be carefully studied and evaluated for designation as an ACEC. The existing 1970s withdrawal from mining laws should be retained to further protect the valuable subsistence fisheries resources. Additionally the area should be afforded protection from road access.

Existing ACECs need to be reviewed. Significant areas within or adjacent to a number of the ACECs in the planning area have been conveyed to Doyon, Limited and the State. Doyon now owns significant land holdings near the villages of Kaltag, Galena, Ruby, Tanana, and Hughes. As a result, significant portions of the Nulato Hills, Dulbi-Kaiyuh Mountains Subunit, and Galena Mountain Caribou ACECs, among others, are no longer in federal land status, and should be removed formally from ACEC designation. Other areas within the ACECs may no longer be appropriate for continued designation because of the status of adjacent lands or for other reasons.

The Kateel, Box, and Inglutalik River ACECs/RNAs should be expanded north to include the Tagagawik River and all BLM-managed lands north to the boundary of the Selawik NWR. These ACECs/RNAs, as well as the Nulato Hills ACEC, are critical migration routes and winter range for the western arctic caribou herd. The BLM-managed lands along the eastern flanks of these ACECs should remain closed to all forms of mining and mineral leasing.

The Jim River ACEC should be expanded to include the Jim River drainage, South Fork Koyukuk, upper Prospect Creek, and the forks of Bonanza Creek. The alpine zone of the Jim River Mountains seems to be vegetatively distinctive in that lichen communities and primary successional heath communities form unusual and dramatic islands among extensive lichen covered granitic talus slopes. This is a strikingly beautiful valley with remarkable rock glaciers. The Jim River is a significant salmon drainage and provides quality hunting, trapping, and grayling fishing opportunities. Additionally this area connects Yukon Flats and Kanuti NWRs along a low-altitude corridor. The expanded ACEC should be closed to mineral entry as mining or road construction would severely impact this narrow river valley.

The Kanuti watershed comprises a highly scenic and productive basin upstream of the highway, and provides a higher-altitude connector between Yukon Flats and the Kanuti NWRs. Viewed from Finger Rock and the Dalton Highway the Upper Kanuti basin is a lovely and distinctive arctic landscape that should be protected so that tourists driving the road and Alaskans can continue to enjoy this place, and hunting opportunities remain uncompromised. An ACEC closed to mineral entry might protect this special, scenic valley.
The BLM should analyze and consider designating the Kanuti River and the Kanuti-Kilolitna Rivers drainages as RNAs/ACECs to protect rare plant communities and cultural resources. Both river corridors host relic Beringia vegetation communities, and notable archaeological sites. These drainages are untrammled and offer outstanding opportunities for solitude and primitive recreation. Further, they host adjacent vegetation communities that are either rare or diminishing on the landscape (relic Beringia vegetation communities [Lipkin 2007]); old growth spruce/lichen habitats), scenic tors, serpentine soils, and active golden eagle (BLM sensitive species) nesting territories.
Nulato Hills is some of the wildest lands in the state. Additionally the following rivers should be assessed for designation as an ACEC: Dakli Creek, Wheeler Creek, Sulukna River, Titna River, Telsitna River, and Sethkokna River. Justification: Maintaining water quality and quantity in areas of known spawning grounds that are critical for providing subsistence resources for the surrounding villages.
The BLM should designate new ACECs to protect anadromous fish and lands adjacent to anadromous streams, caribou habitat (calving, wintering, foraging, and migration), and habitat for rare and imperiled species in the planning area. Protections of uplands adjacent to anadromous streams would protect the Yukon River drainage as it intersects with BLM-managed land. ACEC protections on the BLM-managed land adjacent to the Yukon River and its tributaries could help king salmon runs as this declining population trend over time is of a serious conservation concern.
All BLM-managed lands north of the Yukon River in the Tozitna River ACEC, and its north and south subunits, as well as all the Ray Mountains, all the way to the Kanuti NWR boundary, should be retained by the BLM. State tentatively selected lands in this area should not be approved. The Tozitna ACEC should be expanded north to include all these tentatively selected State lands. All BLM-managed lands in this area should be closed to all mineral entry and leasing.
The BLM should leave the Tozitna River ACEC, both Tozitna Subunits South and North, and the McQuesten Creek, Spooky Valley and Ishtalitna Creek Hot Springs RNAs in place as they are for the next 20 years. Let our descendents [sic] have a chance to make that decision. The area is doing just fine now.
Regarding the Tozitna Subunits, Kanuti Hot Springs, Indian Mountain, and Upper Jim River ACECs and the Spooky Valley and Ishtalitna Creek Hot Springs RNAs: Acreage totals provided in documents provided by the BLM are vague and conflicting, representing boundaries that have varied over the past 25 years; Maps are of poor quality; and there are mixed and confusing references to ACECs and RNAs.
Much of the Tozitna Sub-units and the Jim River area are in conflict with State of Alaska land selections or top-filings where land status is unresolved. The State land interest includes most of the Ray Mountains and the adjacent pipeline corridor where selections have been top-filed over temporary BLM-managed land closures (public land orders [PLOs]) of the corridor. The State has filed land selections, or has top-filed selections over most of these lands in good faith that the lands will be re-opened to selection as per the intent of the Statehood Act. The area of State selection applications are largely due to mineral resource potential of the region, and the strategic importance of the only available corridor to the Arctic. In spite of a 2006 report to Congress on the status of existing PLOs that are blocking State selection, the BLM has taken no action to remove these closures.
Any proposed extension of the Snowden Mountain ACEC to the east that would fully encompass the headwaters of Mathews River is unnecessary. The Snowden Mountain ACEC adequately and effectively protects sheep habitat as is, in the vicinity of Snowden Mountain. The headwaters of Mathews River has a documented history of continuous and existing recreational use over the last 47 years that includes limited ORV use by occupants of a single private land in-holding. Limited ORV use by this land owner within the Mathews River corridor has not negatively affected sheep or sheep habitat.
The Sulukna River provides critical sheefish (inconnu) spawning habitat for subsistence fisheries and portions are currently open to mining. The BLM should maintain or expand the current ACEC for the Sulukna River and close the lower portion of the river to mining.

The following ACECs were established primarily for fish habitat protection. Considering the existing federal and State authorities that protect fisheries these ACECs should not be designated in the updated Central Yukon RMP, or the BLM must explicitly state why existing protections do not adequately protect these areas and why their fisheries resources are particularly unique: Hogatza River Tributaries ACEC, Indian River ACEC, Inglutalik River ACEC, North River ACEC, Shaktoolik River ACEC, Sulukna River ACEC, Tozitna River ACEC, Ungalik River ACEC, Jim River ACEC, Ivishak River ACEC.
Many commenters were in support of retaining the Galbraith Lake ACEC. Reasons cited included aesthetics and research.
The BLM should consider combining the Redlands and Arms Lake RNAs into one larger RNA encompassing most of the BLM-managed lands in the area. The enlarged RNA should be managed for its unique qualities.
The BLM should consider combining the Lake Todatonten Pingos and the South Todatonten Summit RNAs into one larger RNA. The combined RNA should be managed to maintain the unique qualities for which they were designated.
The Oksrukuyik River watershed should be designated as a RNA for the purpose of research and education, rather than as a Wild and Scenic River. This watershed is representative of the common geologic, soil, or water features (43 CFR 8223) in the area and is highly useful for basic and applied research that is relevant to land management and environmental stewardship in this region of Alaska. The Oksrukuyik Creek watershed has a rich history of research activities and continues to be very productive in this regard. Short and long term studies have been geared towards gaining an improved understanding and ability to predict the effects of environmental change on arctic landscapes. The long term monitoring and observing activities and experimental manipulations that have taken place to date have been fundamental in enabling a better understanding of the ecology of the surrounding tundra, streams, and lakes and of the controls of ecosystem structure and function, enabling better land and natural resource management in the region. The investments that have been made thus far and the benefits of all that stands to be learned through future research activities. Restrictions that a Wild and Scenic designation would impose would represent a loss of both the investments that have been made thus far and the benefits of all that stands to be learned through future research activities.
Continue the restriction on overnight camping in Toolik Lake RNA because this restriction: reduces interference with research projects; similar camping sites are readily available outside the RNA.
The current plan does not allow camping in the Toolik Lake RNA. The BLM should evaluate if recreational camping can be allowed in the southern region of the Toolik Lake RNA, which is adjacent to Arctic NWR Atigun River Gorge area, without impacting the identified cultural and research activity values.
Many supported the recommendation of the TFS Management Team and Steering Committee: The boundaries of the Toolik Lake RNA should be expanded as shown in the submitted map. Because of the expansion of long-term research programs beyond the current boundaries of the RNA, we request that the BLM expand the area included in the Toolik Lake RNA primarily eastward, with a small extension south to the area just north of the Atigun River along the Dalton Highway. There are more than 14,000 scientific research plots in the vicinity of TFS, and the expansion of the RNA proposed here would pick up most of the current research plots that are on BLM-managed land in the area. We recognize that the current and proposed expanded areas of the Toolik Lake RNA include lands within the Alaska pipeline corridor and that this status will not change.
The Toolik Lake RNA should be continued and enlarged to include important research sites outside of the current boundary. More specifically, the RNA designation should also be applied to existing research areas around Atigun, which are located as to not prevent access to Atigun canyon by other users.
The BLM should consider expanding Toolik Lake RNA to the south, north, and west of the current RNA. Invaluable research has already come from the current RNA and expanding the area designated for this use will ensure continued research for the benefit of all Alaskans.
Consider expanding Toolik Lake RNA to include some of the key research sites outside of the current RNA. Expansion to the south is needed to include the sites near Atigun. To the north and east, there are important research plots and no other current designations for the land. The eastern boundary should follow the watershed boundary between the Sagavanirktok River and the lake district east of the Kuparuk River.
The Toolik Lake RNA should be expanded to include study plots at the Imnavait Creek materials site, these are a key comparison to those closer to Toolik Lake that allow researchers to discern what differences are due to soils and vegetation (which contrast at those sites), but have very similar climatic conditions.

The present boundaries of the Toolik Lake RNA should be extended on the west, northwest, and south, sides, to include (a) at least the entire upper watershed of the Toolik River and Oksrukuyik Creek including all of its headwater lakes, and (b) at least a portion of the dune and heath habitats near the Atigun River crossing. These areas are already being used in long-term studies by investigators based at TFS, and researchers are running out of space closer to Toolik Lake.
The TFS has become the flagship Arctic field research station in the U.S. Researchers and students from a wide range of disciplines come from around the world come to work and study here. The location of the field station provides easy access to a wide range of environments that are representative of other places in the Arctic and the facilities and services offered allow a wider range of research to be conducted than has ever been the case previously. Much of the research that is being done is either explicitly of a long-term nature or could serve as a crucial benchmark for future studies if the local environment is preserved.
The Central Yukon Management Plan needs to recognize the importance of continuous long-term data collection to proper understanding and management of this unique area. The Toolik Lake RNA supports such long-term research.
Material sites should not be enlarged into the Toolik Lake RNA. Any enlargement of the Imnavait Creek material site could damage ongoing studies, some of which have been in place since the installation of the Dalton Highway in the 1970s.
The Toolik Lake RNA should be maintained and the area protected to allow research to continue.
The BLM should renew the University of Alaska TFS lease.
The use off off-road vehicles should be restricted within the Toolik Lake RNA.
The BLM should continue with efforts to “pre-screen” areas within the Toolik Lake RNA for research. Regulations about the degree and area of impact involved in triggering a requirement for a research permit within the RNA, and regulations about the number of separate permits required for a single project working at multiple locations, should be reformulated at least for research that takes place within the RNA. Many scientists engaged in research at Toolik, and particularly graduate students, often would like to set up new experiments relatively quickly based on observations made in the field. The current BLM permitting process requires a great deal of time for review, and has hampered research progress in the past. Streamlining the permitting process will allow new research to proceed more efficiently.
The current BLM regulations governing use of the Toolik Lake RNA work well, allowing compatible non-research activities such as hunting, fishing and hiking. Given the huge investment in research and the sensitive nature of the long-term studies, we urge that non-research uses continue to be restricted to those that are temporary and non-invasive. Similar restrictions should be applied to the expanded RNA if it is approved.
If the Toolik Lake RNA receives more land, it would prohibit access for subsistence activities. Toolik is the only place where you find caribou. People in Stevens Village would not want to lose access to those lands.
The RMP should evaluate the potential impacts of granting more land to the Toolik Lake RNA and how this would impact nearby recreation or subsistence activities and access to the caribou hunting in this area.
The public commented about the beauty of the RNAs at Toolik and Galbraith Lake areas and the importance of their research uses; they should continue to be RNAs and not be further degraded.
The Indian River and Hogatza River Tributaries ACECs should be monitored more carefully to detect if mining in these areas is affecting the values for which these areas are being managed (salmon and sheefish spawning areas). BLM-managed land in the upper Hogatza River could be affected by one of the more southerly route proposals of the Ambler Road.
Approximately 90 percent of the Hogatza River Tributaries ACEC has been conveyed and is now managed by the State of Alaska or Alaska Native Claims Settlement Act corporations. The BLM should consider dropping the Hogatza River Tributaries ACEC.
The 1994 BLM Hogatza ACEC Aquatic Habitat Management Plan is no longer a relevant assessment or justification of the Hogatza River Tributaries ACEC: The maps are out of date with regard to the lode mining potential; the plan does not discuss modern placer mining techniques and safeguards; the aquatic habitat evaluation is based on out of date and incomplete information without regard to new mining techniques and safeguards; the ACEC location information is unclear; and 90 percent of the land is selected for conveyance or is no longer under BLM management.

The Hogatza area land status maps provided by the BLM show conflicting ACEC boundaries. The May 1994 BLM Hogatza ACEC Aquatic Habitat Management Plan maps indicates the ACEC abuts the entire east edge to the Doyon land; whereas the 2013 BLM GIS map layer indicates a gap in the Dry Creek area between the ACEC and the Doyon Land.
An incomplete chum salmon survey and poor spawning count timing has resulted in inaccurate assessment of the salmon in the Hogatza River system.
Mineral potential in the Hogatza River Tributaries ACEC area should be considered when reevaluating this ACEC. For example, there is potential for uranium, lode gold, silver, and rare earth minerals. Additionally, there is potential for a gold-copper-molybdenum porphyry system west of the ACEC. Native corporation lands in the area are available for mineral exploration and development. Taiga Mining is a large, highly regarding placer mining company which received an award from the BLM for their outstanding reclamation at Hogatza. In spite of Taiga's diligent reclamation work the ACEC closures effectively prohibit Taiga Mining from staking additional placer claims.
Mineral potential should be considered when reevaluating the Indian River ACEC. Little modern information is available for the region although occurrences of zinc, copper, lead and gold have been reported. Modern exploration has been discouraged by restrictive military access and withdrawals for Native land selections. Indian Mountain is cored by an intrusive pluton that is generally grouped with the Hogatza Plutonic Belt which elsewhere is known to contain these metals plus uranium and rare earth elements.
Mineral potential and existing mining claims should be considered when reevaluating the Tozitna-Ray Mountains region ACECs. The intent of the State of Alaska to acquire lands in this region has encouraged the location of several thousand mining claims, the majority staked under the State mining location rules for location on State-selected lands. Multiple studies by Alaska Geological Survey, U.S. Bureau of Mines, and the U.S. Geological Survey indicate mineral potential across this region, including documented occurrences of rare earth elements, tin, tungsten, zirconium, chromium, germanium, manganese, and uranium. Mineral occurrences and exploration potential occurs as an approximately 50 mile-wide northeast-trending zone from the Kokrine Hills on the southwest, and including the Tozitna River, the Ray Mountains, Ishtalitna, Kanuti, Kilolitna, Ray, Salt, and Dall drainages, and ultimately beyond Caribou Mountain to the northeast including the pipeline corridor, the Jim River and upper Prospect Creek regions. The area of State selection applications and top-filings approximates the distribution of critical metals in statewide surveys by the National Uranium Resource Evaluation of the 1970s and 1980s. Dysprosium is one of the rare earth elements and is also one of the most sought after high-technology. The distribution of dysprosium correlates with the area of mineral potential across the Tozitna subunit. Similar patterns of distribution occurs for each of the other rare earth elements and associated metals such as tin and tungsten. Known deposits of chromium occur in a parallel adjoining belt forming the northwest side of the Ruby batholith trend. Generally in this area of central Alaska there are numerous perspective mineral locations that would be of interest to industry if questions of secure mineral title are resolved.
The Dulbi-Kaiyuh, Galena Mountain Caribou, and Sagwon Bluffs ACECs were designated to protect peregrine falcon habitat. Peregrine falcons were de-listed in August 1999. These areas should be reevaluated.
Consider establishing a RNA near Lake Minchumina as there have been researchers coming there to do water resource research, air quality research and methane research.
The RNAs (and ACECs) near the Tozi are doing what they were designated to do and should be left in place in the new RMP. The Tozi should not be a wild and scenic river because it would draw attention to the area and defeat the purpose of keeping it as habitat. Just keep managing it as you have for the past 20 years.
ACECs in the Utility Corridor that are small should be retained and expanded if possible.
During scoping, the following areas were mentioned as areas with potential as ACECs: Central Arctic Management Area for species like wolves and sheep, and Henshaw Creek near the Allakaket River for salmon and sheefish spawning areas.

3.3 SPECIFIC ACEC NOMINATIONS AND EVALUATIONS

The following sections include specific evaluations grouped by areas depicted in **Figure 1**. Existing ACECs and nominated areas were evaluated for soil, water, fish, wildlife, vegetation, special status species, cultural, natural systems, and geology as appropriate. Values noted by the nominator were evaluated for each ACEC. In some cases, these values were not explicitly stated in the nomination, so the BLM had to infer values intended. The tables in the following sections and the summary table in **Chapter 4** discuss values identified by the nominator and any additional values found to meet both the relevance and importance criteria by the BLM. Full evaluations are available from the Central Yukon Field Office.

3.3.1 Accomplishment Creek

Background: During scoping for the CYRMP, the BLM received a nomination for Accomplishment Creek (a tributary to the Sagavanirktok River) as a potential ACEC.

Nominator: BLM

Rationale for nomination provided by the nominator: The Accomplishment Creek drainage is unique in that it is one of a small number of streams flowing into the Arctic Ocean that provides reliable groundwater flow through the winter. The spring areas in Accomplishment Creek and its tributary, Section Creek, are essential to the survival of Dolly Varden, a species sought as a subsistence and sport fishing resource. Conditions at the springs provide spawning habitat, allow eggs to incubate and hatch, and provide an overwintering refuge for all age classes of fish, from eggs to adults.

Fisheries work conducted by the BLM in the summer of 2012 found juvenile Dolly Varden inhabiting the braided sections of Accomplishment and Section Creeks. Tagging studies have shown that Dolly Varden caught at Kaktovik for subsistence reside in several North Slope rivers, including streams in the Sagavanirktok River drainage (e.g., Accomplishment Creek; Craig 1989).

Visitor use of the Dalton Highway is also increasing with improved road conditions. As a result, populations of Dolly Varden will continue to come under increased sport fishing pressure from anglers accessing the Sagavanirktok River drainage via the Dalton Highway. The upstream (eastern) edge of this watershed borders the Arctic NWR.

Area nominated: The nominated area is 41,000 acres. See **Figure 2**, Existing and Nominated ACECs/RNAs – North Dalton, and **Figure 3**, ACECs found to Meet the Relevance and Importance Criteria – North Dalton.

Values nominated: Soil, water, fish/riparian

Accomplishment Creek

<i>Soil</i>	<i>Yes/No</i>	<i>Rationale</i>
Relevant	Yes	The freshwater spring system, in the Accomplishment Creek nomination, encompassing soil, water, riparian, and wetland resources, is rare to the planning area and supports a unique incubation, rearing, and overwintering

Accomplishment Creek

		habitat essential for maintaining Dolly Varden diversity in the planning area and Alaska as a whole.
Important	Yes	Soil resources in the Accomplishment Creek nomination are generally in a pristine and undisturbed condition and would be considered unique on a national scale. Even so, they are not unique in the planning area or region. However, permafrost underlies much of the Accomplishment Creek nomination. These soils are highly susceptible to erosion or other soil movement caused by disturbance of the ground cover and subsequent thawing of permafrost. The unique and fragile soils around the freshwater springs in the nominated area control the hydrology of the springs. Any disturbance of these soils would affect the freshwater springs flow regime.
Water	Yes/No	Rationale
Relevant	Yes	The freshwater spring system in the Accomplishment Creek nomination encompasses soil, water, riparian, and wetland resources and is rare to the planning area. It supports a unique incubation, rearing, and overwintering habitat essential for maintaining Dolly Varden diversity in the planning area and in Alaska as a whole.
Important	Yes	While water quality in the Accomplishment Creek nomination is excellent and would be considered unique on a national scale, it is not unique in the planning area or region. The series of freshwater springs that provide water for incubation and rearing of Dolly Varden are unique in the planning area and in Alaska. Maintaining water quality and temperature in these freshwater springs is crucial in the incubation of Dolly Varden eggs and maintaining crucial overwintering habitat. Adhering to the mandates of the Clean Water Act is a national priority.
Fish/Riparian	Yes/No	Rationale
Relevant	Yes	Dolly Varden, grayling, round whitefish, burbot, and slimy sculpin have been documented in this drainage. Some of the adult Dolly Varden migrate to the Arctic Ocean during the summer to feed and then return to the Accomplishment Creek drainage to spawn and overwinter near the springs. Resident fish species, including juvenile and adult Dolly Varden, make use of the spring areas year-round. Riparian resources in the area are integral to maintaining the quality of this unique aquatic habitat.
Important	Yes	<p>The springs are found in a limited number of watersheds in the region and create unique overwintering habitat for fish species. The lack of overwintering habitat is the major limiting factor to survival for arctic fish species. The springs provide a source of winter flow and small habitat refuges needed for fish survival.</p> <p>Riparian resources are integral to the overall condition and quality of these unique aquatic refugia. This is due to their performance of ecological functions that define sediment transport processes, biochemical and nutrient cycling, and food web maintenance. In addition, riparian resources, when viewed independently of other resources, constitute only 3 percent of BLM-managed lands in the planning area, which could be considered somewhat rare on a regional basis. Riparian resources perform a disproportionate number of biological and physical functions on a unit area basis. Because of this, protection is warranted to satisfy national priorities of water quality, land health, floodplain function, and biodiversity maintenance.</p>

3.3.2 Atigun-Sagavanirktok River

Background: During scoping for the CYRMP, the BLM received an ACEC nomination for the Atigun-Sagavanirktok River from the USFWS. This nomination overlaps with both the Accomplishment Creek nomination and the nominated Toolik Lake RNA expansion.

Nominator: USFWS (Arctic NWR)

Rationale for nomination provided by the nominators: The Arctic NWR proposes that BLM-managed lands east of the Toolik Lake RNA be designated as an ACEC for wildlife, fishery, cultural, and scenic values. This area also has unique recreation values that may warrant special consideration as a management objective.

Atigun River is a tributary to the Sagavanirktok River, and both have direct road access from the Dalton Highway, making them a very popular river float by a variety of recreation groups. The Arctic NWR's boundary is 0.75 mile from the Dalton Highway, in the Atigun River Gorge area. NWR streams in the Atigun River Gorge have been assessed and evaluated through a formal wild and scenic river review process for the Arctic NWR's Draft Revised Comprehensive Conservation Plan. These streams were found to be eligible and suitable for inclusion in the National Wild and Scenic Rivers System. The streams have a classification of wild and outstandingly remarkable recreation and geologic values (USFWS 2015, Appendix I, Section 2.1.2). Both BLM- and Arctic NWR-managed lands in the Atigun-Sagavanirktok River nomination provide for very high quality recreation for hikers, campers, hunters, and wildlife viewing groups; at the same time, they provide outstanding scenic, geologic, wildlife, fishery, and cultural resource values.

The 1989 BLM Proposed RMP/Final EIS for the Utility Corridor states that the Galbraith Lake ACEC has "the highest concentration of historic and prehistoric cultural resources of any region yet inventoried along the Utility Corridor. Located on the northern side of the Brooks Range, north of Atigun Pass, the scenic value is high. The geology and paleontology are remarkable and are accessible via the Dalton Highway."

This area also has been identified as providing crucial Dall sheep lambing and mineral licks areas. Dall sheep have been observed using the east side of the Atigun River near Atigun Gorge as lambing-nursery areas, particularly in the spring when green vegetation is just beginning to emerge (Craig and Leonard 2009). Immediately north of the Atigun-Sagavanirktok nomination is the former Slope Mountain ACEC, which was also designated for its lambing and mineral lick values. The Sagavanirktok River drainage is believed to contain the largest overwintering aggregation of Dolly Varden on the North Slope (Viavant 2005).

While most of the spawning and overwintering habitats are in the lower sections of the Sagavanirktok drainage, the Accomplishment Creek tributary in this nominated ACEC is used by Dolly Varden and arctic grayling for spawning and for overwintering by adults, juveniles, and newly emerged fry (Craig and McCart 1974, McCart et al. 1972). In spring and summer, waters in this nominated ACEC provide important habitat for many other fish species (pers. comm. Randy Brown, USFWS 2014).

Area nominated: The nominated ACEC extends eastward from the northern boundary of the Toolik Lake RNA to the Arctic NWR boundary, including that portion of the Sagavanirktok River on BLM-managed land. The nominated area is 105,000 acres. See **Figure 2**, Existing and Nominated ACECs/RNAs – North Dalton, and **Figure 3**, ACECs found to Meet the Relevance and Importance Criteria – North Dalton.

Values nominated: Soil, water, fish/riparian, geology, cultural

Atigun-Sagavanirktok River

Soil	Yes/No	Rationale
Relevant	Yes	The area that satisfies the relevance criteria is encompassed within the Accomplishment Creek nomination. See the evaluation for this area.
Important	Yes	The area that satisfies the importance criteria is encompassed within the Accomplishment Creek nomination. See the evaluation for this area.
Water	Yes/No	Rationale
Relevant	Yes	The area that satisfies the relevance criteria is encompassed within the Accomplishment Creek nomination. See the evaluation for this area.
Important	Yes	The area that satisfies the importance criteria is encompassed within the Accomplishment Creek nomination. See the evaluation for this area.
Fish/Riparian	Yes/No	Rationale
Relevant	Yes	The area that satisfies the relevance criteria is encompassed within the Accomplishment Creek nomination. See the evaluation for this area.
Important	Yes	The area that satisfies the importance criteria is encompassed within the Accomplishment Creek nomination. See the evaluation for this area.
Geology	Yes/No	Rationale
Relevant	No	While the geologic views for this ACEC are impressive, they are scenic and not of geologic significance.
Important	No	While the geologic views for this ACEC are impressive, they are scenic and not of geologic significance.
Cultural	Yes/No	Rationale
Relevant	No	There are several known archaeological sites in the nominated ACEC, but densities are not unusually high. Site densities are significantly higher on drainages to the west, which are managed by the National Park Service. Communication with University of Alaska paleontologists indicates that densities of paleontological resources are to the north and west of the nominated ACEC, in the vicinities of Slope Mountain and the Atigun Gorge.
Important	No	While there are two Late Pleistocene sites (Putu and Bedwell) that appear to meet the threshold for inclusion on the National Register of Historic Places (NRHP), both have been extensively excavated and likely do not retain significant research potential.

3.3.3 Dalton Utility Corridor

Background: During the scoping process for the CYRMP, Scott and Heidi Schoppenhorst of Wiseman Village nominated the Dalton Utility Corridor as an ACEC.

Most of the nominated area is subject to PLOs 5150 and 5180. These orders withdraw the area from mineral leasing and, at a minimum, location for non-metalliferous minerals. The area within the inner corridor is withdrawn from all mineral entry. This nomination encompasses many existing and nominated ACECs north of Wiseman.

Nominators: The Schoppenhorsts (Boreal Lodging Wiseman Village)

Rationale for nomination provided by the nominators: This area has been nominated because it holds several unique values and characteristics. It has historic value as the Koyukuk River Valley, which is rich in placer gold mining history that far predates the establishment of the Utility Corridor. Significant historic mining activity sites and archaeological evidence are scattered within the Utility Corridor, from south of Coldfoot to the north of Sukakpak Mountain, spanning the corridor's width. This includes the still inhabited historic trading village of Wiseman, containing many of the original, unique log structures from its establishment in the early 1900s. This is one of the few intact, inhabited, and mostly unmodified historic mining establishments still in existence in Alaska; it is unique in the Brooks Range. Evidence of early nomadic Nunamuit Eskimo habitation and archaeological evidence are also present in the Dalton Corridor through this Brooks Range and North Slope section.

The scenic value of the Dalton Highway is unprecedented in the Utility Corridor through the Brooks Range. This is the only road access to Alaska's Arctic and is one of the few east-west-trending mountain ranges in the world. The corridor spans this width and provides easy access to relatively undisturbed unique geologic features found only in the Brooks Range; it is appreciated by thousands.

The Utility Corridor within the Brooks Range is home to and part of important migratory routes for many resident arctic wildlife populations: Dall sheep, caribou, moose, brown and black bears, wolves, wolverines, lynx, red foxes. It is season and year-round habitat for migratory and resident avian species, including those that are threatened. Dall sheep rely on crossing the Utility Corridor in the Brooks Range during different seasons for access to minerals, food, and lambing and breeding locations. Areas of specific knowledge are east/west crossing through the Marion Creek Mountain and adjacent area, Snowden/Big Jim and adjacent areas, Atigun Pass north/south through most drainages east and west of the highway up to the Galbraith Lake/Atigun Gorge area, and again at Slope Mountain north of Toolik Lake. These are all very crucial habitat locations for Dall sheep, who use them for access and crossing to sustain healthy populations.

Caribou have traditionally used the Atigun Pass/Atigun drainage for north-south migrations. Staging areas are the lands around Galbraith Lake and Toolik Lake and the migratory route in the Dalton Corridor north and south of the pass into the Dietrich and Koyukuk River valleys. Resident caribou populations pass in and out of the corridor east to west around the Nugget Creek/Gold Creek and upper Middle Fork of the Koyukuk River/Bettles River valleys. Specific vegetation, primarily lichens, are found in the corridor and are essential for caribou. Significant disruptions to these feeding areas and migratory paths are detrimental to this resident herd. For

example, a very large gravel pit created at Nugget Creek a few years ago demolished a huge lichen area traditionally used by these resident caribou. Slate Creek, Marion Creek, Wiseman Creek, Minnie Creek, and Nugget/Gold/Linda Creek drainage area are essential habitat for black bears.

Although brown bears are found throughout the Utility Corridor in the Brooks Range, specific habitat degradation that potentially affects populations are in the Brooks Range southern boundary around Rosie Creek, north between Coldfoot and Wiseman (highlighting Marion Creek and Wiseman/Nolan Creek valleys), and in the Dietrich River valley/Chandalar Shelf area and areas north and south of Atigun Pass.

Habitat for other small game and birds essential for maintaining diversity of all species is in the Utility Corridor throughout the Brooks Range and includes specific scientific study areas of small game. Hares are found in the Middle Fork of the Koyukuk River drainage (Cathedral Mountain area, Wiseman/Nolan/Hammond River area) and those areas from Chandalar Shelf to north of Toolik Lake, where extensive small mammal research is continuously conducted.

Species essential to diversity are snowshoe hares, arctic ground squirrels, ptarmigan, and voles; areas of specific degradation threat are in the Koyukuk/Dietrich River valleys for ptarmigan and hares and from Chandalar Shelf and north past Toolik Lake for ground squirrels. Disruption to their habitat directly affects populations of furbearers and resident raptors and possibly brown bears.

Nesting habitat for a variety of raptors and resident avian populations are found throughout the Brooks Range and the north slope Utility Corridor area; these include peregrine falcon in the Wiseman Creek/Nolan valley areas and nesting habitat for great horned owl, ravens, and goshawk owls and in the Snowden Mountain and Atigun Pass area for golden eagles. Toolik Lake and surrounding area is also nesting habitat for yellow-billed loons and bluethroat.³ Note that specific denning areas for wolverines, wolves, and foxes are found in this section of the corridor and at many sites within a short distance of the highway.

Arctic grayling, whitefish, burbot, lake trout, and other species of fragile, slow-growing northern fish are found throughout this section of the Utility Corridor. Significant disruption to streams crossing the corridor or the introduction of chemicals into these pure watersheds would have adverse impacts on the fragile populations.

The Utility Corridor north/south and the Brooks Range contain hundreds (if not thousands) of species of fragile and sensitive arctic plants, including rare and relict species. Sensitive plant research at and near the Toolik Lake research facility is ongoing and is significant in monitoring climate change. Sensitive aquatic and other plants found in the corridor provide essential nutrients for all species of large and small mammals, as well as many thousands of migratory birds. Fragile tundra underlain with permafrost, which is found in the entire area presented for consideration, is subject to degradation.

³ A small thrush species (*Luscinia svecica*)

Geologic features in the Utility Corridor through the Brooks Range section highlight unique and rare formations and years of glacial sculpture. The area is a source of not only scientific interest and multiple books, but also beauty for all who travel this section of the highway. Once an ancient mountain range was eroded and covered by a shallow tropical sea; folds and other features formed by water currents can be viewed from the highway.

The distinctive composition of multiple mineral conglomerates, metamorphosed materials, and remnants of aquatic fossil remains is evident throughout this section. Some corals evident here are found in only a few other places on Earth. Sukakpak Mountain is limestone metamorphosed with marble seams and is a monument of the Dalton Highway; marble content and distinct features of Snowden Mountain are equally scenic. Cathedral Mountain and 12 Mile Mountain are ancient sister volcanoes on either side of the highway. Ancient coal seams can be viewed by Tramway Bar, and fossils of many types, including Ice Age mammals, are found in many locations throughout. Atigun is the highest road pass found in Alaska and the only road crossing into the high arctic.

Specific natural hazard areas through this section of the corridor are at Atigun Pass, which regularly experiences avalanches during the winter and falling rocks during the summer. Additional natural hazard areas are found in the Dietrich River valley, where debris slides travel down the slopes toward the highway in multiple locations; one of these debris slides currently is considered threatening. During the winter, the unique arctic buildup of ice in shallow streams in the corridor can cause significantly higher water during spring break up and seasonal flooding. Winter brings some of the coldest temperatures recorded in North America, which can be combined with high winds and blowing snow to create hazards to humans and property.

The relevance criteria for the Dalton Highway through the Brooks Range section also defines much of the important criteria for this designation. The qualities found in this section of the Utility Corridor are important and significant to a large and diverse user group; this area does not compare with any other road accessible location in Alaska or the United States. The Dalton Highway being the only road access point for most users creates the significance of future degradation; this would render the area's critical environmental qualities lost and irreplaceable for many user groups.

Thousands of travelers from around the world visit this section of the Dalton Highway for many different reasons each year, as follows:

- Sightseeing, photography, and wilderness travel
- Access to adjacent Department of the Interior-managed lands
- Scientific study and research on any of the natural features/resources outlined above
- Mining, hunting and fishing
- Subsistence lifestyle dependence
- Birding
- Oil transport and the upkeep related to it

Safety concerns are the extreme environment of this nomination's location: extreme subzero temperatures during the winter, high winds, whiteout conditions at times, and avalanche dangers throughout Atigun Pass. All of these factors can threaten life and property if travelers are unprepared. This section of the corridor is entirely in the Arctic and is a dangerous environment during winter, requiring respect and preparedness.

Up until recent years, these diverse user groups have meshed fairly well with the complex web of regulations in place. Since the significance of area resources and unique scenic quality are becoming more publicized, there is more of a demand for resources from this fragile area, which threatens the very qualities that are sought.

The RMP revision process is a good time to implement possible new regulations to ensure continued maintenance and stability for these fragile and irreplaceable resources and qualities in the road-accessible Brooks Range. Designating the BLM-managed Utility Corridor through the Brooks Range to the northern boundary as an ACEC would offer the opportunity to better manage such an amazing, intact ecosystem for future generations.

Additionally, managing for conservative developments and careful consideration for diverse use in the BLM-managed portion of the corridor will also complement adjacent Department of the Interior missions in Gates of the Arctic National Park and Preserve and the Arctic NWR. This would further highlight cooperative management by the BLM, the National Park Service, and the USFWS in the Arctic Interagency Visitor Center, which is also within the area of nomination. The ACEC would truly be exemplary and quite possibly iconic in the lands administered by the Department of the Interior.

Area nominated: The area nominated includes 699,000 acres and encompasses the entire Utility Corridor. It begins south of Cathedral Mountain at approximately Chapman Creek (east and west of the highway to encompass the 10-mile width of the corridor). It extends the length and width of the BLM-managed Utility Corridor to Mile Marker 301 on the North Slope, which the northern extent of the BLM-managed corridor. This includes the Brooks Range section of the Utility Corridor in its entirety. See **Figure 2**, Existing and Nominated ACECs/RNAs – North Dalton, **Figure 4**, Existing and Nominated ACECs/RNAs – Middle Dalton, and **Figure 6**, Existing and Nominated ACECs/RNAs – South Dalton.

Values nominated: Soil, water, fish/riparian, wildlife, special status species, vegetation, geology, cultural

Dalton Utility Corridor

<i>Soil</i>	<i>Yes/No</i>	<i>Rationale</i>
Relevant	Yes	The area that satisfies the relevance criteria is encompassed within the South Fork Koyukuk River nomination, Jim River ACEC and expansion, Midnight Dome/Kalhabuk nomination, Poss Mountain ACEC and expansion, Nugget Creek ACEC, Snowden Mountain ACEC and expansion, and West Fork Atigun River ACEC. See the evaluations for these areas.
Important	Yes	The area that satisfies the importance criteria is encompassed within the South Fork Koyukuk River nomination, Jim River ACEC and expansion, Midnight Dome/Kalhabuk nomination, Poss Mountain ACEC and

Dalton Utility Corridor

		expansion, Nugget Creek ACEC, Snowden Mountain ACEC and expansion, and West Fork Atigun River ACEC, and Accomplishment Creek nomination. See the evaluations for these areas.
Water	Yes/No	Rationale
Relevant	Yes	The area that satisfies the relevance criteria is encompassed within the South Fork Koyukuk River nomination, Jim River ACEC and expansion, Midnight Dome/Kalhabuk nomination, Poss Mountain ACEC and expansion, Nugget Creek ACEC, Snowden Mountain ACEC and expansion, and West Fork Atigun River ACEC. See the evaluations for these areas.
Important	Yes	The area that satisfies the importance criteria is encompassed within the South Fork Koyukuk River nomination, Jim River ACEC and expansion, Midnight Dome/Kalhabuk nomination, Poss Mountain ACEC and expansion, Nugget Creek ACEC, Snowden Mountain ACEC and expansion, and West Fork Atigun River ACEC, and Accomplishment Creek nomination. See the evaluations for these areas.
Fish/Riparian	Yes/No	Rationale
Relevant	Yes	The area that satisfies the relevance criteria is encompassed within the South Fork Koyukuk River nomination and the Atigun-Sagavanirktok River nomination. See the evaluation for these areas.
Important	Yes	The area that satisfies the importance criteria is encompassed within the Accomplishment Creek nomination and South Fork Koyukuk River nomination. See the evaluation for these areas.
Wildlife	Yes/No	Rationale
Relevant	Yes	The area that satisfies the relevance criteria is encompassed within the West Fork Atigun River ACEC, Poss Mountain ACEC, Galbraith Lake ACEC, and Nugget Creek ACEC. See evaluation for these areas.
Important	Yes	The area that satisfies the importance criteria is encompassed within the West Fork Atigun River ACEC, Poss Mountain ACEC, Galbraith Lake ACEC, and Nugget Creek ACEC. See evaluation for these areas.
Special Status Species	Yes/No	Rationale
Relevant	Yes	The area that satisfies the relevance criteria is encompassed within the Toolik Lake RNA. See evaluation for this area.
Important	Yes	The area that satisfies the relevance criteria is encompassed within the Toolik Lake RNA. See evaluation for this area.
Vegetation	Yes/No	Rationale
Relevant	Yes	The area that satisfies the relevance criteria is encompassed within the Toolik Lake RNA. See evaluation for this area.
Important	Yes	The area that satisfies the relevance criteria is encompassed within the Toolik Lake RNA. See evaluation for this area.
Geology	Yes/No	Rationale
Relevant	Yes	The area that satisfies the relevance criteria is encompassed within the Sukakpak Mountain ACEC and expansion. See evaluation for this area.
Important	Yes	The area that satisfies the importance criteria is encompassed within the Sukakpak Mountain ACEC and expansion. See evaluation for this area.
Cultural	Yes/No	Rationale
Relevant	No	While there are three distinct areas of high archaeological site densities in the large area nominated as an ACEC (one of which is already contained in

Dalton Utility Corridor

		an ACEC), there are also significant areas with low site densities. As such, the large area identified is not of an appropriate scale to base an ACEC on cultural resources. It would be more appropriate to consider an ACEC that extends from Chapman Lake to the Bettles River. This area includes a significant density of prehistoric sites south of Coldfoot and a relatively high density of historic mining sites between Coldfoot and the Bettles River.
Important	No	<p>There is a problem of scale with this nomination as it relates to cultural resources. The significant cultural resources near Galbraith Lake are already included in that ACEC. Historic sites in the Utility Corridor, between Coldfoot and the Bettles River, have been severely impacted by continuous placer mining.</p> <p>This being said, the village of Wiseman does contain significant resources, including a historic cemetery. A few other scattered resources retain sufficient research potential to warrant inclusion on the NRHP. Prehistoric sites south of Coldfoot are typically small, shallow deposits; none is currently thought to have unusually significant research potential. This is not to say that unusually significant sites do not exist in this area; however, inventory coverage is incomplete and centers along the Dalton Highway and Trans-Alaska Pipeline System.</p>

3.3.4 Galbraith Lake ACEC

Background: The Galbraith Lake ACEC was designated in 1991 through the Record of Decision (ROD) for the Utility Corridor RMP/EIS (BLM 1991). The BLM received numerous letters from individual researchers and institutions in support of retaining the Galbraith Lake ACEC. The nominated Toolik Lake RNA expansion overlaps the Galbraith Lake ACEC.

Nominator: BLM

Rationale for nomination provided by the nominator: The Galbraith Lake ACEC was reevaluated against the criteria for ACEC designation and the unique characteristics below.

Table 2.4 in the Utility Corridor Proposed RMP/Final EIS lists the following resources for the ACEC: cultural, rare or sensitive plants, scenic values, and Dall sheep lambing areas. The cited management objective (BLM 1989, p. 2-43) is to protect historical and archaeological sites, crucial wildlife habitat, paleontological and geological sites, scenic values, and possibly, rare and sensitive plants.

Area nominated: The current Galbraith Lake ACEC is 53,900 acres. See **Figure 2**, Existing and Nominated ACECs/RNAs – North Dalton, and **Figure 3**, ACECs found to Meet the Relevance and Importance Criteria – North Dalton.

Values nominated: Fish/riparian, wildlife, cultural

Galbraith Lake ACEC

<i>Fish/Riparian</i>	Yes/No	Rationale
Relevant	Yes	Galbraith Lake and the portion of the Atigun River in the ACEC are inhabited by Dolly Varden, arctic grayling, slimy sculpin, round whitefish, burbot, and lake trout. Riparian resources are in proper functioning condition.
Important	No	The riparian resources and species of fish are typical of the area, with only locally significant qualities.
<i>Wildlife</i>	Yes/No	Rationale
Relevant	Yes	Dall sheep in Alaska have a range restricted to mountainous areas, including lands managed by the BLM's Central Yukon Field Office to the east and west of the Dalton Highway. Key habitat for Dall sheep has been identified in this region, including lambing areas, and the BLM continues to document key habitat for Dall sheep in this region. Several ACECs have been designated and nominated to protect sheep, in light of important habitat and hunting pressure.
Important	Yes	This area is known to encompass key or limited habitat sensitive to development, including lambing areas. Protecting this habitat for Dall sheep is key to sustaining a healthy population.
<i>Cultural</i>	Yes/No	Rationale
Relevant	Yes	There is a significant density of cultural resources in the Galbraith Lake ACEC.
Important	Yes	There are more than locally significant cultural resources in the ACEC.

3.3.5 Nigu-Iteriak ACEC

Background: The Nigu-Iteriak ACEC was designated in 1991 through the ROD for the Utility Corridor RMP/EIS (BLM 1991).

Nominator: BLM

Rationale for nomination provided by the nominator: The Nigu-Iteriak ACEC was reevaluated against the criteria for ACEC designation and the unique characteristics below.

Table 2.4 in the Utility Corridor Proposed RMP/Final EIS lists geology and cultural resources for the ACEC. The cited Management Objective (BLM 1989, p. 2-61) is to protect the unique geological, cultural, and scenic resources of the area.

Area nominated: The original ACEC was approximately 62,000 acres. PL 104-333 transferred a portion of the Nigu ACEC to Noatak National Preserve. Part of Iteriak ACEC has been tentatively approved for conveyance to State of Alaska. The current Nigu-Iteriak ACEC is 40,200 acres. See **Figure 2**, Existing and Nominated ACECs/RNAs – North Dalton, and **Figure 3**, ACECs found to Meet the Relevance and Importance Criteria – North Dalton.

Values nominated: Geology, cultural

Nigu-Iteriak ACEC

Geology	Yes/No	Rationale
Relevant	No	No known geological resources have been found within the ACEC.
Important	No	No known geological resources have been found within the ACEC.
Cultural	Yes/No	Rationale
Relevant	No	Known cultural resources within ACEC are found only on lands managed by the National Park Service.
Important	No	Known cultural resources within ACEC are only found on lands managed by the National Park Service.

3.3.6 Toolik Lake RNA (Including Expansion)

Background: The Toolik Lake RNA was designated in 1991 through the ROD for the Utility Corridor RMP/EIS. In 2014, through the scoping process for the RMP/EIS, the TFS Management Committee proposed expanding the Toolik Lake RNA to include 30,800 additional acres. The BLM received numerous letters from individual researchers and institutions in support of the TFS Management Committee proposal. The expansion overlaps slightly with the Galbraith Lake ACEC.

Nominator: Toolik Field Station Management Committee

Rationale for nomination provided by the nominator: The Toolik Lake RNA and expansion was reevaluated against the criteria for ACEC and RNA designation and the unique characteristics below.

Research in the RNA has expanded significantly since designation. There are more than 14,000 scientific research plots near TFS. The area around TFS has been chosen as the Arctic site for the National Ecological Observatory Network. This is an upcoming program of ecological observation funded by the National Science Foundation and is expected to last 30 to 50 years. The expansion of the RNA would include most of the current research plots that are on BLM-managed land near the TFS.

The TFS Management Committee feels that the current BLM regulations governing the use of the RNA are working well. Given the huge investment in research and the sensitive nature of the long-term studies, the committee urges that the current restrictions on overnight camping in the Toolik Lake RNA be maintained and extended to the expanded RNA.

The ROD for the Utility Corridor RMP/EIS designated the Toolik Lake RNA. It is approximately 77,200 acres and is home to the TFS, which is managed by the University of Alaska Fairbanks. The TFS is one of the premier Arctic field stations of the United States, with a history of long-term, continuous research that extends back almost 40 years. Work by scientists at TFS began in 1975 and has resulted in much of what is known about the structure and function of the terrestrial and aquatic ecosystems of the Arctic foothills and tundra, the effects of climate change on these regions, and feedbacks through gas and hydrological fluxes to global climate. In addition, TFS-based work has resulted in a showcase of discoveries on the adaptations of plants and animals to

the Arctic, population-level changes in distributions, and the physiology and phenology⁴ of life history traits.

Much of the research that is currently being done in the vicinity of the TFS is either explicitly long term or could serve as a crucial baseline for future studies of effects of land use and climate change if the local environment is preserved for research.

The TFS is a national facility used by many researchers. From 2009 to 2012, up to 533 different scientists, staff, and contractors worked out of the TFS each year, conducting and supporting scientific research in the area. Each year, these scientists come from up to 109 different institutions from around the country and are working on up to 81 separately funded research projects. More than 879 scientific publications have resulted from work based at the TFS. Research around the TFS is a major activity and will continue to be so in the future. Designating the land around the TFS as an RNA has been important in ensuring the integrity of the long-term research of scientists working out of the TFS; it gives scientific research a seat at the table when other land uses are being discussed.

Because of the expansion of long-term research programs beyond the current boundaries of the RNA, the TFS Management Team submitted a nomination to expand the current RNA primarily eastward. There also would be a small extension south to the area just north of the Atigun River, along the Dalton Highway. There are more than 14,000 scientific research plots near TFS, and the expansion of the RNA would pick up most of the current research plots that are on BLM-managed land near the TFS.

Area nominated: The current Toolik Lake RNA is 77,200 acres. The nominated expansion of Toolik Lake RNA includes 30,800 additional acres. The expanded RNA as nominated would encompass 108,000 acres. See **Figure 2**, Existing and Nominated ACECs/RNAs – North Dalton, and **Figure 3**, ACECs found to Meet the Relevance and Importance Criteria – North Dalton.

Values nominated: Soil, fish/riparian, special status species, vegetation, geology

Toolik Lake RNA (Including Expansion)

<i>Soil</i>	Yes/No	Rationale
RNA characteristics	Yes	The Toolik Lake RNA contains a typical representation of permafrost soils, tundra lake, and the tundra biome.
RNA size	Existing: No Expansion: Yes	Due to the increasing research on climate change, the nominator suggested that the size of the current RNA be expanded to encompass more of these soil features and existing studies located outside of the existing boundary.
<i>Fish/Riparian</i>	Yes/No	Rationale
Relevant	Yes	Waters in the nominated ACEC are inhabited by Dolly Varden, arctic grayling, slimy sculpin, round whitefish, burbot, arctic char, and lake trout. Riparian resources are present and are currently in proper functioning condition.

⁴ The functions of living organisms and the study of seasonal and natural phenomena on species

Toolik Lake RNA (Including Expansion)

Important	No	The riparian resources and species of fish are typical of the area, with only locally significant qualities.
RNA Characteristics	Yes	The area has a typical representation of fish and riparian plant species. Fish species may be of value in research studies that evaluate the effects of land use and climate change.
RNA Size	Existing: No Expansion: Yes	Research studies are being conducted outside the original RNA boundaries. The nominated expansion of the RNA would encompass most of the currently permitted activities. Future long-term needs (the life of the RMP) are unclear, so it is difficult to predict whether the nominated RNA will adequately meet the size requirements of the research community.
<i>Special Status Species</i>	Yes/No	Rationale
Relevant	Yes	Energy transportation is the primary function of the corridor lands that comprise this RNA. However, because of the vital importance of the data produced by ongoing research, the area, including BLM Alaska sensitive species habitat, needs to be protected to the extent possible.
Important	Yes	A large number of research projects have been based in and around this lake area. These projects have produced and are producing extremely valuable information concerning the resources of public lands on the North Slope. Only through carefully planned and detailed research findings will it be possible to design land use and resource management strategies that will adequately protect environmental values in the face of resource development. Additionally, two rare plant species, <i>Montia bostockii</i> and Muir's fleabane (<i>Erigeron muirii</i>), are known to occur in the Toolik Lake RNA.
RNA Characteristics	Yes	Two rare plant species, <i>Montia bostockii</i> and Muir's fleabane (<i>Erigeron muirii</i>), are known to occur in the Toolik Lake RNA.
RNA Size	Existing: No Expansion: Yes	Research has expanded out of the designated RNA to include areas representative of the region not represented in the current RNA. The boundaries of the RNA were not large enough or well enough distributed to encompass the larger area. However, the expansion into the area currently occupied by Galbraith Lake ACEC is large enough. The concentration of plots for research in the Galbraith Lake ACEC is in the Dalton Highway Corridor Management Area, which is not open to motorized traffic. The potential issues with motorized traffic were cited as a primary reason for the extension. There is a justifiable need for extending the RNA to the east but not to the south.
<i>Vegetation</i>	Yes/No	Rationale
Relevant	Yes	See <i>Special Status Species</i> above.
Important	Yes	See <i>Special Status Species</i> above.
RNA Characteristics	Yes	See <i>Special Status Species</i> above.
RNA Size	Existing: No Expansion: Yes	See <i>Special Status Species</i> above.

Toolik Lake RNA (Including Expansion)

Geology	Yes/No	Rationale
RNA Characteristics	Yes	The RNA contains common geological features that are found throughout the northern slope of the Brooks Range.
RNA Size	Existing: Yes Expansion: Yes	The RNA is of adequate size to provide the research that is currently being conducted.

3.3.7 West Fork Atigun River ACEC (Including Expansion)

Background: The West Fork Atigun River ACEC was designated in 1991 through the ROD for the Utility Corridor RMP/EIS (BLM 1991). In 2014, through the scoping process for the RMP, the BLM proposed expanding the West Fork Atigun River ACEC to include additional Dall sheep habitat.

Nominator: BLM

Rationale for nomination provided by the nominator: The West Fork Atigun River ACEC was reevaluated against the criteria for ACEC designation and the following unique characteristics:

Designation would promote protection for Dall sheep lambing area and mineral licks. Ewes traditionally return to the same habitat each spring to bear their offspring. Dall sheep use natural mineral licks to replace minerals important to the skeletal system. Destructive activities or excessive human disturbance may eliminate these important habitats necessary to sustain a viable sheep population.

A growing number of hunters use the Dalton Highway for easy access to hunt Dall sheep; therefore, the BLM needs to protect this crucial habitat to sustain a viable sheep population. Potentially disturbing activities, such as increased traffic and recreational use or additional pipeline construction, may disturb sheep (BLM 1989).

Area nominated: The West Fork Atigun River ACEC includes 9,200 acres, as defined in 1991 Utility Corridor RMP/EIS (BLM 1991)⁵. The nominated expansion identified during scoping includes an additional 24,300 acres. The total acres of the existing ACEC plus the nominated expansion is 33,500 acres. See **Figure 2**, Existing and Nominated ACECs/RNAs – North Dalton, and **Figure 3**, ACECs found to Meet the Relevance and Importance Criteria – North Dalton.

Values nominated: Soil, wildlife

⁵ The 1991 Utility Corridor RMP/EIS identified approximately 8,500 acres as the ACEC. The acreage discrepancy is due to improved mapping and not a difference in the area intended to be designated as an ACEC.

West Fork Atigun River ACEC

Soil	Yes/No	Rationale
Relevant	Yes	The West Fork Atigun River ACEC contains natural mineral licks. These rare soil features provide essential minerals to ungulates and are essential for maintaining healthy populations of Dall sheep populations in this vicinity
Important	Yes	Natural mineral licks are rare and sensitive soil types.
Wildlife	Yes/No	Rationale
Relevant	Yes	<p>The nominated area meets the relevance criteria for Dall sheep habitat. There is a known mineral lick in this area, and sheep are regularly observed in the current ACEC. Additionally, well-used sheep habitat appears to extend to the north from the ACEC boundary to the Galbraith Lake ACEC. There is a potential mineral lick due east of the current ACEC that may provide important habitat.</p> <p>The nominated area meets the relevance criteria for raptor habitat. The 2010 BLM raptor survey suggests that the area is inhabited by a number of golden eagles and other raptors. Notably, golden eagles and other raptors appear to use the area northeast of the current ACEC (extending to Galbraith Lake ACEC on the west side of the West Fork Atigun River).</p>
Important	Yes	<p>The nominated area meets the importance criteria for Dall sheep habitat, which is necessary for sustaining viable sheep populations and is sensitive to destructive activities.</p> <p>The nominated area meets the importance criteria for raptor habitat. Golden eagles are protected under the Bald and Golden Eagle Protection Act.</p>

3.3.8 Midnight Dome/Kalhabuk

Background: During the scoping process for the CYRMP, the BLM received an ACEC nomination from Mr. Jack Reakoff for the Midnight Dome/Kalhabuk Mountain area. This proposed ACEC and nomination information provided was evaluated against the criteria for an ACEC.

Nominator: Mr. Jack Reakoff

Rationale for nomination provided by the nominator: This area was nominated because it is crucial Dall sheep habitat, which includes a calcareous mineral source (mineral lick) and is within a migration route; this allows sheep to move to advantageous habitat. The nominator also states that this area is essential to the physical survival of Dall sheep in the winter and spring and provides a unique crossing between divided habitats.

Nolan Road has little impact on sheep movements. However, potential activities exist that may make the area vulnerable; these include: permanent human occupation of a camp in the sheep crossing area, any recreational motor vehicle use of Midnight Dome in winter, or other human activities that are continually disruptive to Dall Sheep movements and use of the area. The FLPMA would recognize this area as important for the American public's Dall sheep's population health. Additionally, this area was nominated for its cultural values regarding subsistence use of Dall sheep.

Area nominated: Midnight Dome/Kalhabuk Mountain, approximately 10,000 acres. The nominator has described this location to be at approximately 150°10' W-67°27'N. See **Figure 4**, Existing and Nominated ACECs/RNAs – Middle Dalton, and **Figure 5**, ACECs found to Meet the Relevance and Importance Criteria – Middle Dalton.

Values nominated: Soil, fish/riparian, wildlife

Midnight Dome/Kalhabuk

Soil	Yes/No	Rationale
Relevant	Yes	The Midnight Dome/Kalhabuk nomination contains natural mineral licks. These rare soil features provide essential minerals to ungulates and are essential for maintaining healthy Dall sheep populations in this vicinity.
Important	Yes	Natural mineral licks are rare and sensitive soil types.
Fish/Riparian	Yes/No	Rationale
Relevant	Yes	Chinook salmon are documented as rearing in lower Wiseman Creek (ADFG 2014). Most of the riparian resources found in the ACEC are undisturbed and fully functional. There are placer gold mining claims on Union and Confederate Gulch and on south slope tributaries of the Hammond River. There is also a mining road bisecting the ACEC that leads to Nolan. Mining has disturbed the riparian resources in these areas. Depending on the site, the riparian resources in the disturbed areas are either nonfunctional (vegetation and woody debris needed to dissipate stream energy at high flows is missing) or functioning at risk (some vegetation remains, but the capability to dissipate stream energy at high flows is compromised).
Important	No	The species of fish present and the riparian community that is integral to the function of this aquatic habitat are typical of the area, with only locally significant qualities.
Wildlife	Yes/No	Rationale
Relevant	Yes	The nominated area meets the relevance criteria for sheep habitat for the reasons cited above. The migratory route of the sheep indicated in the nominator's description is corroborated by sheep movement data from a recent study. One known mineral lick has been identified within the current boundary. The nominated ACEC meets the relevance criteria for raptor habitat since the BLM observed a number of sticknests, including a golden eagle sticknest, in this area during its 2010 survey.
Important	Yes	The nominated area meets the importance criteria for sheep, especially given the significant decrease in sheep numbers in recent years and because this subpopulation is a regularly used subsistence resource for Wiseman residents. Intact and contiguous Dall sheep habitat is necessary for sustaining viable sheep populations and is sensitive to human activity. This area does not meet the importance criteria for raptor habitat. Although the habitat is present, raptor numbers may not be great enough to justify special protection in this area.

3.3.9 Nugget Creek ACEC

Background: The Nugget Creek ACEC was designated in 1991 through the ROD for the Utility Corridor RMP/EIS (BLM 1991).

Nominator: BLM

Rationale for nomination provided by the nominator: The Nugget Creek ACEC was reevaluated against the criteria for ACEC designation and the unique characteristics below.

Current designation protects this habitat, where Dall ewes return each spring to bear their offspring. Dall sheep use natural licks to replace minerals important to the skeletal system. Destructive activities or excessive human disturbance may eliminate or alter access to these important habitats necessary to sustain viable sheep populations.

A significant number of hunters use the Dalton Highway for easy access to hunt Dall sheep; therefore, the BLM needs to protect this crucial habitat to sustain a viable sheep population. Areas such as this ACEC should be earmarked for attention since a number of potentially disturbing activities (e.g., increases in traffic and recreation and future pipeline construction) may occur during the life of this plan (BLM 1991).

Area nominated: Approximately 3,300 acres, as defined in 1991 Utility Corridor RMP/EIS (BLM 1991). See **Figure 4**, Existing and Nominated ACECs/RNAs – Middle Dalton, and **Figure 5**, ACECs found to Meet the Relevance and Importance Criteria – Middle Dalton.

Values nominated: Soil, wildlife

Nugget Creek ACEC

Soil	Yes/No	Rationale
Relevant	Yes	The Nugget Creek ACEC contains natural mineral licks. These rare soil features provide essential minerals to ungulates and are essential for maintaining healthy Dall sheep populations in this vicinity.
Important	Yes	Natural mineral licks are rare and sensitive soil types.
Wildlife	Yes/No	Rationale
Relevant	Yes	The nominated area still meets the relevance criteria for sheep habitat for the same reasons cited when this ACEC was established. Specifically, in repeated surveys, sheep have been observed to inhabit the area, and two known mineral licks have been identified within its boundary. This area meets the relevance criteria for raptor habitat since a number of sticknests, including golden eagle sticknests, were observed in the 2010 BLM survey.
Important	Yes	The nominated area still meets the importance criteria for sheep for the same reasons as were cited when this ACEC was established. Intact and contiguous Dall sheep habitat is necessary for sustaining viable sheep populations and is sensitive to human activity. This ACEC does not meet the importance criteria for raptor habitat. Although raptors have been observed in the area, and therefore habitat is present, the

Nugget Creek ACEC

		2010 survey did not indicate that the area had a great enough concentration of raptors to be especially notable habitat for them.
--	--	---

3.3.10 Poss Mountain ACEC (Including Expansion)

Background: The Poss Mountain ACEC was designated in 1991 through the ROD for the Utility Corridor RMP/EIS (BLM 1991). In 2014, through the scoping process for this RMP, the BLM proposed expanding the Poss Mountain ACEC to include areas to the north, incorporating the Gold Creek mineral lick, and areas to the south, incorporating the Minnie Creek drainage, an additional 16,800 acres of land.

Nominator: BLM

Rationale for nomination provided by the nominator: The Poss Mountain ACEC and the expansion was reevaluated against the criteria for ACEC designation and the unique characteristics below.

The Poss Mountain ACEC was designated to protect lambing habitat for Dall sheep and known mineral lick sites. Pregnant ewes use the same habitat annually, and mineral licks are essential to sheep health. In 1991, the authors of the ROD for the Utility Corridor RMP/EIS noted that, “a growing number of hunters use the Dalton Highway for easy access to hunt Dall sheep; therefore the BLM needs to protect this crucial habitat to sustain a viable sheep population...the area should be earmarked for attention since a number of potentially disturbing activities near this habitat (principally mining) may occur within the life of this plan.”

The BLM established that “crucial habitat and use periods will be monitored” and that the ACEC should be inventoried to “identify any additional crucial sheep habitats.” Program activities outlined in the ROD specified that an area of 160 acres around a given mineral lick in the ACEC would be withdrawn from mineral entry and location under the General Mining Law of 1872, as amended.

A collaring study conducted from 2009 to 2011 suggested that the Poss Mountain subpopulation is likely separated by natural and human-made barriers from other subpopulation ranges; the isolated Poss Mountain subpopulation was shown to regularly cross Minnie Creek. This isolated subpopulation relies on a known mineral lick within the perimeter of the current Poss Mountain ACEC, as well as a mineral lick located to the north of the ACEC, on an embankment of Gold Creek.

The Gold Creek mineral lick is near an area of human activity. To the west of the mineral lick, a large material site has been established to support road construction. Mining is being conducted to the east of the mineral lick. The mineral lick is now between the gravel pit and an operation just upstream. The high level of human activity will greatly increase the potential for disturbance of sheep using the lick. Further development of the area will likely compound disturbance of the isolated subpopulation.

The BLM proposes to extend the Poss Mountain ACEC north to encompass the Gold Creek mineral lick. Furthermore, the expansion south of the current ACEC to include the Minnie Creek drainage should also be considered since this area is regularly used by this population as well.

Notably, abundance survey results from 2012 to 2014 suggest reduced lamb production in this region; therefore, there is a high likelihood of reduced abundance in all sheep cohorts in future years. This underscores the importance of protecting sheep habitat to the greatest extent possible.

Area nominated: The Current Poss Mountain ACEC includes 8,700 acres⁶, with an additional 16,800 acres nominated. The nominated expansion of Poss Mountain ACEC is to the north and encompasses the Gold Creek mineral lick and to the south to and includes the Minnie Creek drainage. The existing ACEC and nominated expansion total approximately 25,500 acres. See **Figure 4**, Existing and Nominated ACECs/RNAs – Middle Dalton, and **Figure 5**, ACECs found to Meet the Relevance and Importance Criteria – Middle Dalton.

Values nominated: Soil, wildlife

Poss Mountain ACEC (Including Expansion)

<i>Soil</i>	Yes/No	Rationale
Relevant	Yes	The Poss Mountain ACEC contains natural mineral licks. These rare soil features provide essential minerals to ungulates and are essential for maintaining healthy Dall sheep populations in this vicinity.
Important	Yes	Natural mineral licks are rare and sensitive soil types.
<i>Wildlife</i>	Yes/No	Rationale
Relevant	Yes	<p>The current and nominated areas still meet the relevance criteria for sheep habitat for the same reasons as were cited when this ACEC was established. One known mineral lick has been identified within the current boundary; the expansion would encompass a second lick on Gold Creek, as well as areas where sheep have been observed in repeated surveys since 2004.</p> <p>The nominated area meets the relevance criteria for raptor habitat since a number of sticknests, including a golden eagle sticknest, were observed in the 2010 BLM survey. The expansion would include a number of other known sticknest sites.</p>
Important	Yes	<p>The current and nominated areas still meet the importance criteria for sheep for the same reasons that were cited when this ACEC was established. Intact and contiguous Dall sheep habitat is necessary for sustaining viable sheep populations and is sensitive to human activity.</p> <p>This ACEC does not meet the importance criteria for raptor habitat. Although raptors have been observed in the area, and therefore habitat is present, the 2010 survey did not indicate that the area had a great enough concentration of raptors to be especially notable habitat for them.</p>

⁶ The 1991 Utility Corridor RMP/EIS identified approximately 8,000 acres as the ACEC. The acreage discrepancy is due to improved mapping and not a difference in the area intended to be designated as an ACEC.

3.3.11 Snowden Mountain ACEC (Including Expansion)

Background: The Snowden Mountain ACEC was designated in 1991 through the ROD for the Utility Corridor RMP/EIS (BLM 1991). In 2014, through the scoping process for the RMP, the BLM proposed expanding the Snowden Mountain ACEC to the east around Mathews Creek to include additional sheep habitat.

Nominator: BLM

Rationale for nomination provided by the nominator: The Snowden Mountain ACEC and expansion was reevaluated against the criteria for ACEC designation and the following unique characteristics.

The Snowden Mountain ACEC was designated to protect Dall sheep habitat and mineral lick sites as well as to protect the unique geologic exposures and associated paleontology. It was established that “crucial habitat and use periods will be monitored” and that the ACEC should be inventoried to “identify any additional crucial sheep habitats.” Accordingly, the sheep subpopulation in the Snowden Mountain ACEC and the surrounding vicinity has been monitored and inventoried regularly, particularly from 2000 to 2014.

Surveys of sheep abundance conducted by the ADFG have been the primary source of sheep population monitoring for the Central Brooks Range, including the BLM-managed Dalton Highway Corridor Management Area.

The ADFG has used the two most regularly surveyed units (1A and 1B) to index the status of sheep abundance in the Central Brooks Range; 1A, the larger unit, encompasses the Snowden Mountain ACEC. Additionally, between 2009 and 2011 radio collared sheep locations were used to identify highly used sheep habitat in relation to ACEC boundaries and survey units. The current boundary of the Snowden Mountain ACEC does not include the area encompassing the headwaters of Mathews Creek, which sheep frequently use. While the existing Snowden Mountain ACEC is situated along the western slope of the Snowden Mountain massif, more sheep activity was found to occur on the northern and eastern slopes of that ridge, east of the ACEC boundary. The BLM recommends that, to adequately protect important sheep habitat, the Snowden Mountain ACEC be extended eastward to the boundary of BLM-managed land near Mathews Creek. Notably, abundance survey results from 2012 to 2014 show reduced lamb production and survival for the Snowden Mountain ACEC subpopulation; therefore, there is a high likelihood of reduced abundance in all sheep cohorts in future years. This underscores the importance of protecting sheep habitat to the greatest extent possible.

Area nominated: The current Snowden Mountain ACEC is approximately 29,700 acres, as defined in the Utility Corridor RMP/EIS (BLM 1991⁷ ; Snowden Mountain, mile 217 of the Dalton Highway). The nominated expansion identified during scoping includes an additional 72,300 acres to include the headwaters of Mathews Creek. The total acres of the existing ACEC

⁷ The 1991 Utility Corridor RMP/EIS identified approximately 28,000 acres as the ACEC. The acreage discrepancy is due to improved mapping and not a difference in the area intended to be designated as an ACEC.

plus the nominated expansion is 102,000 acres. See **Figure 4**, Existing and Nominated ACECs/RNAs – Middle Dalton.

Values nominated: Soil, fish/riparian, wildlife, geology

Snowden Mountain ACEC (Including Expansion)

Soil	Yes/No	Rationale
Relevant	Yes	The ACEC contains natural mineral licks. These rare soil features provide essential minerals to ungulates and are essential for maintaining healthy populations of Dall sheep populations in this vicinity.
Important	Yes	Natural mineral licks are rare and sensitive soil types.
Fish/Riparian	Yes/No	Rationale
Relevant	Yes	The ADFG's Freshwater Fish Inventory database ⁸ lists slimy sculpin and arctic grayling as present in the Mathews River and Nutirwik and Snowden Creek watersheds. ADFG does not list the Mathews River or Nutirwik or Snowden Creeks as habitat for anadromous fish (ADFG 2014). The status of riparian resources has not been documented; however, due to lack of disturbance in the ACEC, riparian resources are expected to be fully functional.
Important	No	The species of fish present and the riparian community that is integral to the function of this aquatic habitat are typical of the area, with only locally significant qualities.
Wildlife	Yes/No	Rationale
Relevant	Yes	The nominated area meets the relevance criteria for Dall sheep habitat. The expanded area would include additional heavily used sheep habitat (based on recent studies) and encompasses two additional potential mineral licks. The nominated area also meets the relevance criteria for raptor habitat. The BLM 2010 raptor survey showed that the established ACEC area is home to a high concentration of raptor and golden eagle sticknest sites and use areas.
Important	Yes	The nominated area meets the importance criteria for Dall sheep habitat, which is necessary for sustaining viable sheep populations and is sensitive to destructive activities. The nominated area also meets the importance criteria for raptor habitat. Golden eagles are protected under the Bald and Golden Eagle Protection Act.
Geology	Yes/No	Rationale
Relevant	Yes	This occurrence consists of (a) a 6-inch-thick gypsum-calcite zone in shaley limestone, which contains abundant fine-grained pyrite, and (b) a vein quartz float that contains traces of graphite, pyrite, and chalcopyrite (Mulligan 1974). Dillon and others (1988) mapped the country rocks as a Devonian igneous unit of

⁸ <http://www.adfg.alaska.gov/index.cfm?adfg=ffinventory.main>

Snowden Mountain ACEC (Including Expansion)

		diabase, gabbro, and diorite dikes and sills that are in contact with Middle Ordovician black, carbonaceous phyllite and meta-limestone. Calc-silicate hornfels occurs along the contact. Chromium, lead, nickel, and vanadium were detected spectrographically in samples from the occurrence (Mulligan 1974).
Important	Existing: Yes Expansion: No	The existing ACEC boundary meets the importance criteria but the expanded boundary does not. The existing boundary encompasses the geology of interest for this ACEC. Making the ACEC larger does not make it any more exceptional for the area.

3.3.12 Sukakpak Mountain ACEC (Including Expansion)

Background: The Sukakpak Mountain ACEC was designated in 1991 through the ROD for the Utility Corridor RMP/EIS (BLM 1991). In 2014, through the scoping process for this RMP, the BLM proposed expanding the Sukakpak Mountain ACEC to include Dillon Mountain, an additional 15,200 acres.

Nominator: BLM

Rationale for nomination provided by the nominator: The Sukakpak Mountain ACEC and the expansion was reevaluated against the criteria for ACEC designation and the unique characteristics below.

The Sukakpak Mountain ACEC was designated to protect unique geologic structures, folds, and faults; the view of the geologic process of mountain building and erosional forces; rare plant species; and one of the more outstanding scenic views along the Dalton Highway. The ACEC lies entirely within BLM-managed lands. Since approval of the Utility Corridor RMP, Native and State land selections immediately east of Sukakpak Mountain have been conveyed and the State of Alaska has top-filed the Utility Corridor.

The BLM has operators to conduct tours along the Dalton Highway, of whom five conducted winter trips as well (K. Egger, BLM Recreation Planner, pers. comm.). While freight hauling by truck is still the primary use, the scenery and wildlife along the highway corridor have grown in importance as resources valued by the public. The Dalton Highway is increasingly seen and marketed globally as a unique Alaskan destination. More visitors, using more commercial tour operators, are visiting in the fall, winter, and spring for aurora viewing and winter scenery; during the 2013-2014 season, the BLM permitted 12 operators to conduct tours along the Dalton Highway, five of whom conducted winter trips as well (K. Egger, pers. comm.).

In the broad Dietrich and Bettles River valleys along the highway, the timberline is at an elevation of only about 1,200 feet and the view from the highway is largely unobstructed. Sukakpak Mountain, (elevation 4,459 feet) with its unique shape and distinctive northward-pointing horn, stands apart from the surrounding mountains and draws the eye for miles in either direction. Its western wall is a sheer vertical face, towering 3,060 feet above the highway, slightly less than El Capitan in California's Yosemite Valley. The clear water of the Bettles River flowing along the northeast flank of the mountain adds to the overall scenic beauty.

The Dalton Highway Scenic Byway Corridor Partnership Plan (Alaska Department of Natural Resources 2010) identifies Sukakpak Mountain as “a dominant feature along this stretch of the highway, a massive marble rock rising from the earth.” In its Intrinsic Quality Assessment, the Byway Plan identified Sukakpak Mountain for both its scenic and natural qualities, calling it “... one of the most recognized Brooks Range peaks viewable from the byway.”

To protect more of this spectacular view for highway travelers, the BLM recommends that the boundary of the Sukakpak Mountain ACEC be adjusted to include all BLM-managed lands extending west to the highway right-of-way in Townships 32 North, Range 10 West, Fairbanks Meridian, and south to a line along the southern border of Sections 25 to 29 (approximately Dalton Milepost 200.5 and across peak 2929); and in Townships 33 North, Range 9 West, and 33 North, Range 10 West, Fairbanks Meridian, from the Inner Corridor to as far north as the southern border of Section 12, Township 33 North, Range 10 West, Fairbanks Meridian and Sections 8 and 9, Township 33 North, Range 9 West, Fairbanks Meridian (approximately Dalton milepost 210). This adjustment would also protect the scenic view of Dillon Mountain, a spectacular 4,820-foot peak on the opposite side of the Bettles River from Sukakpak Mountain. Together, Dillon and Sukakpak Mountains form a breathtaking view, even by Alaska standards.

Extending the boundary to the highway right-of-way will also protect the frost mounds (palsas) that border the highway on the western slope of Sukakpak Mountain. These permafrost features are unusually abundant here. Some are ephemeral, appearing and melting in one or more seasons, and some are more stable and long lasting. Brown and Krieg (1983) describe the mounds and their vegetation in detail, with the calcareous fens between the mounds supporting a rich flora that is distinct from the tops of the mounds or the nearby forest. The frost mound area supports at least one plant species, longstem sandwort (*Arenaria longipedunculata*), identified as rare by Lipkin and Parker (1995), and the ACEC description from the RMP identifies another plant, *Orthotrichum diminutivum*, a bristle moss. Further research may show that the area between the highway and the base of Sukakpak Mountain is an exemplary example of the frost mound-fen ecosystem. This boundary adjustment would add 15,200 acres to the ACEC, for a total of 18,700 acres.

Area nominated: Approximately 3,500 acres is nominated, as defined in the 1991 Utility Corridor RMP/EIS (BLM 1991), along with 15,200 acres to the west, south, and north of the existing ACEC. The total acres of the existing ACEC plus the nominated expansion is 18,700 acres. See **Figure 4**, Existing and Nominated ACECs/RNAs – Middle Dalton, and **Figure 5**, ACECs found to Meet the Relevance and Importance Criteria – Middle Dalton.

Values nominated: Fish/riparian, wildlife, geology, scenic

Sukakpak Mountain ACEC (Including Expansion)

<i>Fish/Riparian</i>	<i>Yes/No</i>	<i>Rationale</i>
Relevant	Yes	Chum salmon are documented in the lower Bettles River (ADFG 2014). Arctic grayling, Dolly Varden, and slimy sculpin have also been documented in the nominated ACEC (ADFG Freshwater Fish Inventory database ⁹). Though a small portion of the riparian resources have been disturbed along the Dalton Highway, the remainder of the riparian habitat present is undisturbed and is expected to be in a fully functional condition.
Important	No	Species of fish present and the riparian community that is integral to the function of this aquatic habitat are typical of the area, with only locally significant qualities.
<i>Wildlife</i>	<i>Yes/No</i>	<i>Rationale</i>
Relevant	Yes	<p>The current ACEC and the nominated expanded ACEC both meet the relevance criteria for Dall sheep habitat. While this area is generally lower elevation than most of the ACECs designated for sheep habitat, there are some records of small groups of sheep on Sukakpak Mountain. (Note: most of the Sukakpak Mountain ACEC area has not been included in sheep surveys conducted since 2004.) The northernmost section of the expansion overlaps the southernmost point of the nominated Snowden Mountain ACEC expansion (it lies within the regularly surveyed Unit 1A); several bands of sheep have been recorded in this area.</p> <p>The nominated ACEC meets the relevance criteria for raptor habitat; the 2010 BLM raptor survey suggests that there is a small number of golden eagles and other raptors in this area.</p>
Important	No	The current Sukakpak Mountain ACEC would not meet the importance criteria for Dall sheep. The most valuable sheep habitat encompassed in the nominated expansion of the Sukakpak ACEC would be encompassed within the nominated Snowden Mountain ACEC expansion.
<i>Geology</i>	<i>Yes/No</i>	<i>Rationale</i>
Relevant	Yes	The Sukakpak Mountain prospect consists of 2 or 3 quartz-stibnite-gold veins exposed intermittently for 1 kilometer (.62 mile) in and near a high-angle fault at the contact between Devonian and Silurian(?) Skajit limestone and underlying Ordovician to Cambrian(?) graphitic quartz-, chlorite-, calcareous schists intruded by metabasite dikes (Dillon 1982). The veins occur in the Skajit limestone along thin schist layers or along the contact between marble and the underlying schist unit. The veins consist of early sulfide-poor (traces of chalcopyrite and tetrahedrite) and later stibnite- and gold-bearing quartz. The stibnite occurs as euhedral crystals in amounts ranging from less than 10 percent to more than 50 percent of the vein. Stibnite crystals as long as 8 inches are present. Gold occurs as small cubes and as wire and flakes in fractures in the veins, along with

⁹ <http://www.adfg.alaska.gov/index.cfm?adfg=ffinventory.main>

Sukakpak Mountain ACEC (Including Expansion)

		stibnite, quartz, and graphite. The veins exhibit characteristics of open-space filling that include crystalline stibnite and cockscomb quartz crystals.
Important	Existing: Yes Nominated: No	The existing ACEC boundary meets the importance criteria but the nominated expanded boundary does not. The existing ACEC boundary encompasses the geology of interest for this ACEC. The expanded boundary encompasses even more of the same geology, and making the ACEC larger does not make it any more exceptional for the area.
Scenic	Yes/No	Rationale
Relevant	Yes	As described above, Sukakpak Mountain, with its unique shape and location draws the eye for miles in either direction. The Dalton Highway Scenic Byway Corridor Partnership Plan identifies Sukakpak Mountain as a dominant visual feature and one of the most recognizable Brooks Range peaks viewable from the highway. Sukakpak ACEC is located within the Central and Eastern Brooks Range, which has a Scenic Quality Rating of Class A, which indicates high scenic value. The Dalton Highway has a (draft) Sensitivity Level Rating as High most of the ACEC is within the Foreground-middle ground distance zone (0-5 miles). This would lead to a Visual Resource Inventory of Class II, but could be identified as Visual Resource Inventory Class I due to it being a special designation (scenic ACEC).
Important	Yes	The Dalton Highway is marketed globally as a unique Alaska destination for tourism. Sukakpak Mountain viewshed has more than locally significant qualities that give it special worth and distinctiveness.

3.3.13 Jim River ACEC (Including Expansion)

Background: The Jim River ACEC was designated through the ROD for the Utility Corridor RMP/EIS (BLM 1991). In 2014, through the scoping process for the CYRMP, the BLM and the Allakaket Tribal Council nominated the Jim River ACEC for expansion.

Large portions of the ACEC were State-selected. The objective of current management, which allows for mineral materials disposal, is for this ACEC to protect or enhance chum and king salmon spawning areas, overwintering habitat for resident and anadromous species, and sport fishing. Raptor habitat must be monitored and protected, and scenic, recreation, and archaeological resources must be protected.

Current management practices and allowable uses include protecting fishery habitats and populations, including salmon spawning areas and overwintering and nursery/rearing habitats. Plans of operation with stipulations should be required. Mitigation measures should be applied to all surface-disturbing activities. This is to avoid unduly affecting aquatic and riparian habitat, threatened, endangered, or candidate species (including plants and peregrine falcon), or any other protected resource.

Seasonal use and surface occupancy restrictions, including oil and gas leasing, may be identified once inventory and monitoring studies have been conducted. Habitat crucial to threatened and endangered species, especially peregrine falcons, should be protected. New mineral material sites would be approved within the floodplain only if no other economically feasible sites are available.

Nominators: BLM and the Allakaket Tribal Council

Rationale for nomination provided by the nominators: The Jim River ACEC and the expansion was reevaluated against the criteria for ACEC designation and the unique characteristics below.

The Allakaket Tribal Council nominates the Jim River ACEC for expansion because it includes important salmon spawning areas, which hold critical subsistence value for the people of Allakaket. All of the Henshaw River is an important spawning ground for Chinook and chum salmon and other small fish species. Additionally, the surrounding land is important for access to subsistence hunting.

This area is culturally significant and has been traditionally hunted and fished by the people of Allakaket. All of the Alatna River and the surrounding areas provide important caribou, moose, and Dall sheep habitat. All species of whitefish and cisco spawn in this river, which is also a major spawning area for sheefish (inconnu); the Siruk and Senyalak tributaries are spawning areas for salmon, and Chebanika Creek tributary is an important seining area.

The BLM has also proposed an expansion of the Jim River ACEC. This expansion was evaluated against the criteria for ACEC designation and the unique characteristics discussed below. The Jim River ACEC was designated based on fishery, cultural, and recreation resources. Management objectives for the fish resources included protecting or enhancing Chinook and chum salmon spawning areas, over-wintering habitat for resident and anadromous species, and sport fishing.

The BLM manages the entire Jim River watershed, with the exception of 1,300 acres at the river's mouth, which is encompassed by the Kanuti NWR and private land. The designated ACEC includes the Jim River drainage upstream of the inner corridor. While the Inner corridor provides some protection to aquatic resources because it is closed to mineral entry, the lower river (downstream of the western boundary of the inner corridor) is not afforded any additional protections, other than discouraging gravel extraction in the floodplain. The ADFG's research in the Jim River drainage since establishment of the ACEC has documented the lower Jim River as important spawning and overwintering habitat for grayling (Fish 1998). The lower portion of the river is also used by Chinook and chum salmon as spawning habitat (ADFG 2013).

The proximity of the Jim River/Prospect Creek watershed to the Dalton Highway continues to attract economically feasible roads and mining development opportunities, which threaten its aquatic habitat and fisheries. Given the high value of the aquatic resources and habitat in the lower Jim River, including this portion of the watershed in the ACEC is warranted.

Area nominated: The current Jim River ACEC is approximately 203,000 acres¹⁰. The Allakaket Tribal Council proposes an expansion of the Jim River ACEC to include all areas of the Jim River and the South Fork of the Koyukuk River west of the Dalton Highway and surrounding lands. The area is bordered on the west by the Kanuti NWR and Native Corporation patented land therein, on the east by the Dalton Highway, on the south by a line of five miles south of the Jim River, and on the north by the NWR, the Gates of the Arctic National Park, and Chapman Creek. Additionally, the BLM proposed expanding the existing ACEC to encompass the entire Jim River watershed. The total nominated area is 476,000 acres. See **Figure 6**, Existing and Nominated ACECs/RNAs – South Dalton, and **Figure 7**, ACECs found to Meet the Relevance and Importance Criteria – South Dalton.

Values nominated: Soil, water, fish/riparian, wildlife, cultural

Jim River ACEC (Including Expansion)

Soil	Yes/No	Rationale
Relevant	Yes	The system of upwelling and downwelling areas associated with salmon spawning in the Jim River ACEC are rare to the planning area. It encompasses soil, water, riparian, and wetland resources. Moreover, it supports unique incubation, rearing, and overwintering habitat essential for maintaining chum and Chinook salmon diversity, in the planning area and in Alaska as a whole.
Important	Yes	Soil resources in the Jim River ACEC are generally in a pristine and undisturbed condition and would be considered unique on a national scale. Even so, they are not unique in the planning area or region. However, permafrost underlies much of the Jim River ACEC. These soils are highly susceptible to erosion or other soil movement caused by disturbance of the ground cover and subsequent thawing of permafrost. In addition, the unique and fragile soils around the upwelling and downwelling areas associated with chum and Chinook salmon spawning control the hydrology of the salmon spawning areas. Any disturbance of these soils would affect the spawning area's flow regime and would negatively affect salmon egg survival.
Water	Yes/No	Rationale
Relevant	Yes	See <i>Soil</i> above.
Important	Yes	While water quality in the Jim River ACEC is excellent and would be considered unique on a national scale, it is not unique in the planning area or region. However, the upwelling and downwelling areas associated with chum and Chinook salmon spawning areas that provide water for incubation and rearing of salmon are unique in the planning area and in Alaska. Maintaining water quality and temperature and adequate streamflows in these spawning areas is crucial in the incubation of salmon eggs and maintaining crucial overwintering habitat. Adhering to the mandates of the Clean Water Act is a national priority.

¹⁰ The 1991 Utility Corridor RMP/EIS identified approximately 200,000 acres as the ACEC. The acreage discrepancy is due to improved mapping and not a difference in the area intended to be designated as an ACEC.

Jim River ACEC (Including Expansion)

<i>Fish/Riparian</i>	<i>Yes/No</i>	<i>Rationale</i>
Relevant	Yes	<p>A 2005 BLM open file report (BLM 2005) lists arctic grayling, burbot, round whitefish, slimy sculpin, humpback whitefish, longnose sucker, and northern pike as occurring in the Jim River. That same report lists arctic grayling, round whitefish, slimy sculpin, and longnose sucker as occurring in the South Fork Koyukuk River. The ADFG's Freshwater Fish Inventory database¹¹ lists one additional species (burbot) as present in the South Fork Koyukuk River.</p> <p>The <i>Catalog of Waters Important for Spawning, Rearing, or Migration of Anadromous Fishes – Interior Region, Effective June 1, 2014</i> lists Chinook and chum salmon as using the Jim River for spawning habitat; coho salmon are listed as being present in this system. The catalog lists Chinook, coho, and chum salmon and whitefish as being present in the South Fork Koyukuk River. Chinook salmon are also noted in the catalog as using the South Fork Koyukuk River as rearing habitat.</p> <p>The ADFG's freshwater fish inventory database lists Chinook juveniles as being present in the Jim River watershed. Though a small portion of the riparian resources have been disturbed at the bridge and oil pipeline crossings along the Dalton Highway and at the Bettles Road crossing, the remainder of the riparian habitat is undisturbed and is expected to be in a fully functional condition.</p>
Important	Yes	<p>The Jim River and South Fork Koyukuk River watersheds meet the importance criteria. (The South Fork Koyukuk River watershed was evaluated separately in the analysis of the South Fork Koyukuk River nomination and is not discussed further in this section.) The Jim River watershed has some of the highest concentrations of Chinook and chum salmon spawning in the upper Koyukuk region. Salmon produced in the Jim River are harvested by downstream subsistence and commercial users. The habitat is important for spawning and overwintering of salmon eggs and fry, as well as summer rearing of juvenile salmon.</p> <p>The Jim River watershed also contains excellent habitat for resident fish species, which spawn, rear, and overwinter throughout the drainage. In particular, the Jim River and Prospect Creek harbor significant spawning populations of arctic grayling, from a regional perspective.</p> <p>Riparian resources are integral to the overall condition and quality of this important aquatic habitat. This stems from their ecological functions, which define sediment transport processes, biochemical and nutrient cycling, and food web maintenance. In addition, riparian resources, when viewed independently of other resources, constitute only 3 percent of the BLM-managed lands in the planning area, which could be considered somewhat rare on a regional basis. Riparian resources perform a disproportionate number of biological and physical functions on an area basis. Because of</p>

¹¹ <http://www.adfg.alaska.gov/index.cfm?adfg=ffinventory.main>

Jim River ACEC (Including Expansion)

		this, protection is warranted in order to satisfy national priorities for water quality, land health, floodplain function, and biodiversity maintenance.
Wildlife	Yes/No	Rationale
Relevant	Yes	The nominated area meets the relevance criteria for raptor habitat; a 2010 BLM raptor survey indicates that there are a number of golden eagle and other raptor nests in this area. The above description of known raptor habitat, in combination with the results from the 2010 BLM raptor survey (survey results indicate a number of sticknests in this area, including golden eagle nests) suggest that the area is important raptor habitat. The nominated area also meets the relevance criteria for caribou habitat. A small, non-migratory caribou herd inhabits the headwaters of the Kanuti and Jim Rivers.
Important	Yes	The nominated area meets the importance criteria for caribou. The Hodzana Hills Caribou Herd is genetically distinct and contributes to the ecological diversity of the Central Yukon Planning Area.
Cultural	Yes/No	Rationale
Relevant	Yes	There are significant densities of cultural resources in the nominated ACEC. In addition to known sites, sample surveys have identified a number of additional high probability areas for prehistoric cultural resources.
Important	Yes	Several prehistoric sites in the nominated ACEC are likely to meet the criteria for inclusion on the NRHP. A number of NRHP-eligible sites were identified and excavated in the nominated ACEC during construction of the Trans-Alaska Pipeline System; some of these are of Late Pleistocene age.

3.3.14 South Fork Koyukuk River

Background: During the scoping process for the CYRMP, the BLM nominated the South Fork Koyukuk ACEC.

Nominator: BLM

Rationale for nomination provided by the nominator: The South Fork Koyukuk River provides habitat to a significant number of Chinook salmon and chum salmon. In 1990, the USFWS operated a sonar project to estimate the number of chum salmon. The sonar project was 1.2 miles downstream of the confluence of the South Fork Koyukuk River and Fish Creek. Chum salmon escapement at the conclusion of the project was estimated at 19,485 (Troyer 1993). A follow-up study conducted by the USFWS in 1996 and 1997 used a resistance board weir, located 1.2 miles upstream of the confluence of Fish Creek, as a means to count fish. This project estimated chum salmon escapement at 37,450 (1996) and 11,237 (1997). The estimate in 1997 was incomplete due to high water (Wiswar 1998). Chinook salmon escapement for 1996 and 1997 was estimated at 1,232 and 1,643 (Wiswar 1997, 1998). Spawning concentrations are known to exist near the confluence of the Jim River (Barton 1984); however, the State's atlas to the *Catalog of Waters Important for Spawning, Rearing, or Migration of Anadromous Fishes* (ADFG 2014) documents both Chinook spawning and rearing and chum salmon spawning as far upstream as the Mosquito Fork. The watershed in the planning area is 1,468,000 acres, 57.1 percent of which is managed by the BLM.

Area nominated: The area nominated includes approximately 417,000 acres. It does not include the Jim River because it is addressed separately within the Jim River ACEC and expansion. See **Figure 6**, Existing and Nominated ACECs/RNAs – South Dalton, and **Figure 7**, ACECs found to Meet the Relevance and Importance Criteria – South Dalton.

Values nominated: Soil, water, fish/riparian

South Fork Koyukuk River

Soil	Yes/No	Rationale
Relevant	Yes	The system of upwelling and downwelling areas associated with salmon spawning in the South Fork Koyukuk River nomination are rare in the planning area. The system encompasses soil, water, riparian, and wetland resources and supports a unique incubation, rearing, and overwintering habitat. This is essential for maintaining chum and Chinook salmon diversity in the planning area and Alaska as a whole.
Important	Yes	Soil resources in the South Fork Koyukuk River nomination are generally pristine and undisturbed and would be considered unique on a national scale. Even so, they are not unique in the planning area or region. However, permafrost underlies much of the South Fork Koyukuk River nomination. These soils are highly susceptible to erosion or other soil movement caused by disturbance of the ground cover and subsequent thawing of permafrost. In addition, the unique and fragile soils around the upwelling and downwelling areas associated with chum salmon spawning control the hydrology of the salmon spawning areas. Any disturbance of these soils would affect the spawning area's flow regime and would negatively affect salmon egg survival.
Water	Yes/No	Rationale
Relevant	Yes	See <i>Soil</i> above.
Important	Yes	While water quality in the nominated South Fork Koyukuk River nomination is excellent and would be considered unique on a national scale, it is not unique in the planning area or region. However, the upwelling and downwelling areas that provide water for incubation and rearing of salmon are unique in the planning area and Alaska. Maintaining water quality and temperature and adequate streamflows in these spawning areas is crucial to the incubation of salmon eggs and maintaining crucial overwintering habitat. Adhering to the mandates of the Clean Water Act is a national priority.
Fish/Riparian	Yes/No	Rationale
Relevant	Yes	A 2005 BLM open file report (BLM 2005) lists arctic grayling, round whitefish, slimy sculpin and longnose sucker as occurring in the South Fork Koyukuk River. The ADFG's freshwater fish inventory database ¹² also lists burbot in the South Fork Koyukuk River. The <i>Catalog of Waters Important for Spawning, Rearing, or Migration of Anadromous Fishes – Interior Region, Effective June 1, 2014</i> lists Chinook, coho, and chum salmon and whitefish as present in the South Fork Koyukuk River. Chinook salmon are also noted in the catalog as using the South Fork Koyukuk River as rearing

¹² <http://www.adfg.alaska.gov/index.cfm?adfg=ffinventory.main>

South Fork Koyukuk River

		habitat. A small portion of the riparian resources has been disturbed along the Dalton Highway due to the bridge and oil pipeline crossings and at mining operations downstream of the Dalton Highway; even so, the remainder of the riparian habitat is undisturbed and is expected to be fully functional.
Important	Yes	<p>These waters provide crucial spawning and rearing habitat for salmon. Salmon produced in this nominated ACEC contribute to the availability and abundance of subsistence fish resources harvested in the lower Koyukuk and Yukon Rivers. In addition, these fish play a small but important role in the overall genetic health of salmon produced in the Yukon Basin.</p> <p>Key areas for fish are those habitats that support specific life stages and provide connectivity as fish move between habitat types as part of their life cycle. If, as predicated, climate change affects aquatic habitat in Alaska, there will be changes to water quality and quantity. Changes in water temperature and hydrology will directly affect habitat suitability and ultimately the distribution of fish species. The size of the South Fork Koyukuk watershed in the planning area is 1,468,000 acres, 57.1 percent of which is managed by the BLM. The South Fork Koyukuk River provides connectivity between habitats and, due to its length and varied aquatic habitat, would likely be able to continue to provide suitable fish habitat in an environment affected by a changing climate if stream functionality were maintained.</p> <p>Riparian resources, through their performance of ecological functions, are integral to the overall condition and quality of this important aquatic habitat. This is because they define sediment transport processes, biochemical and nutrient cycling, and food web maintenance. In addition, riparian resources, when viewed independently of other resources, constitute only 3 percent of the BLM-managed lands in the planning area, which could be considered somewhat rare on a regional basis. Riparian resources perform a disproportionate number of biological and physical functions on a unit area basis. Because of this, protection is warranted in order to satisfy national priorities related to water quality, land health, floodplain function, and biodiversity maintenance.</p>

3.3.15 Upper Kanuti River

Background: During the scoping process for the CYRMP, the BLM received an ACEC nomination from the USFWS for the Upper Kanuti River. The Kanuti Hot Springs ACEC, which was designated in 1991 through the ROD for the Utility Corridor RMP, falls within this nomination, but will be evaluated separately in **Section 3.3.16**.

Nominator: USFWS (Kanuti NWR)

Rationale for nomination provided by the nominator: The nominated area contains archaeological, cultural, fish, wildlife, and sensitive/rare natural systems (geologic plant communities).

This area includes historical hunting, fishing, trapping, and gathering territories for at least three tribal bands of aboriginal Alaska Natives: the K'it'it Gwich'in,¹³ the South Fork (Koyukuk) Koyukon Athabascan, and the Lake Todatonten/Kanuti River band of Koyukon Athabascan (Kanuti NWR Comprehensive Conservation Plan; Steven Bergman, pers. comm.). See specific examples below.

Example 1: Archaeological surveys in the nominated ACEC undertaken periodically since the 1970s (e.g., for the Trans-Alaska Pipeline Project) have identified over 50 archaeological sites, primarily in upland settings. This work strongly suggests that uplands in the ACEC, particularly those next to streams and rivers, are likely to yield significant densities of small archaeological sites (Bill Hedman, BLM Archaeologist, pers. comm.).

Example 2: Koyukon place names provided to the Kanuti NWR staff in 2006 by residents of Allakaket refer to traditional knowledge and use of the ACEC area. Specific areas are Too Loghe (a valley east of Dalton Highway, near Old Man airstrip and the headwaters of the Kanuti River), K'eyon T'uh (a 3,068-foot mountain east of Olson's Lake, near the Kanuti River headwaters), and Henok'oolt'oon' Denh (a 3,170-foot mountain east of the Old Man gravel pit [the name means "place where caribou snares were set around mountain"]). This suggests traditional hunting of Hodzana Caribou Herd there.

Example 3: A July 2014 interview with Allakaket Elder Steven Bergman confirms use of the Upper Kanuti River nomination by his relatives and others during the twentieth century.

The area supports or has supported fish and wildlife species of environmental concern by federal or state agencies. See specific examples below.

Example 1: Within traditional summer and calving range of Hodzana Caribou Herd, a small, isolated non-migratory herd.

Example 2: BLM fish surveys (Dave Esse, pers. comm.) indicate occupancy of the Upper Kanuti River by arctic grayling, regarded by the State of Alaska as a high value resident species.

Example 3: Seemingly historically supported golden eagle occupancy/nesting, based on Koyukon place name K'eyon T'uh (translation: eagle nest) for "Kanuti" Mountain (USGS cadastral marker name). Other suitable habitat exists elsewhere. Golden eagle is a BLM Alaska sensitive species. In addition, those on Kanuti River float trips from Dalton Highway to Kanuti NWR reported (e.g., Spindler 2007) blackpoll warbler and olive-sided flycatcher, two BLM Alaska sensitive species. Reports (e.g., Saperstein 1999, 2000) also indicate this stretch supports a diversity of raptors, including merlin, American kestrel, peregrine falcon, sharp-shinned hawk, northern goshawk, red-tailed Harlan's hawk, and bald eagle.

The ACEC contains the Upper Kanuti and Caribou Mountain ultramafic bodies in the Caribou Mountain-Melozitna ultramafic belt (Patton and Miller 1970). It may support sensitive or

¹³ <http://www.ankn.uaf.edu/ANCR/Athabascan/AdelinePeterRaboff/PrelimStudyWesternGwichin/prelimfig5.html>

uncommon plants or plant communities, based on floristic inventories in nearby areas with similar geology and soil profiles.

Archaeological/cultural resources: A very small fraction, perhaps less than 1 percent, of the land in the nominated ACEC has been surveyed for archaeological resources. Archaeological work has largely focused on areas next to the Trans-Alaska Pipeline, Dalton Highway, and a small portion of Kanuti River uplands east of the Dalton Highway. Nevertheless, this small sample of sites has identified several buried components and relatively dense concentrations of small, shallow buried sites. Artifacts recovered from sites in the nominated ACEC indicate human use of the area in excess of 10,000 to 12,000 years. If this work is taken to be a representative sample of the larger ACEC, then this area is likely to yield significant archaeological information, high site densities, and a number of archaeological sites that are eligible for inclusion on the NRHP.

Fish/wildlife resources (Hodzana Hills Caribou Herd): Horne et al. (2014) discuss threats to this herd based on its small population, proximity to Dalton Highway (i.e., easier access), and latitude (i.e., more quickly encountered by more populous hunter population from the south).

Natural system (ultramafic sites): Lipkin (2007) reported that the ultramafic alpine sites on Kanuti NWR “contained unusual and apparently undescribed communities that are either rare or unknown elsewhere.” The flora of the BLM’s ultramafic sites in the nominated ACEC are unknown. Lipkin further reports the seeming sole Alaska occurrence of *Tilingia ajanensis* from Mendenhall’s 1902 expedition and suggests its likely location in the nominated ACEC.

Area nominated: The USFWS nominated the entire or parts of select Hydrological Units within the Kanuti River Watershed, specifically those designated Upper Kanuti River drainage, that are upstream of Kanuti NWR and excluding the Kanuti Hot Springs ACEC. The BLM modified the nominated area to encompass the Hodzana Caribou Herd range, which overlaps with the Jim River ACEC and South Fork Koyukuk River and Upper Teedriinjik (Chandalar) River ACEC nominations. The area totals 232,000 acres. See **Figure 6**, Existing and Nominated ACECs/RNAs – South Dalton, and **Figure 7**, ACECs found to Meet the Relevance and Importance Criteria – South Dalton.

Values nominated: Fish/riparian, wildlife, special status species, cultural

Upper Kanuti River

<i>Fish/Riparian</i>	Yes/No	Rationale
Relevant	Yes	The ADFG’s Freshwater Fish Inventory database ¹⁴ lists arctic grayling as present in the Kanuti River watershed at the Dalton Highway. A 2005 BLM open file report (BLM 2005) lists burbot, round whitefish, northern pike, slimy sculpin, and arctic grayling as occurring in the Kanuti River. The ADFG does not list the Kanuti River in the nominated ACEC as anadromous (ADFG 2014). Though a small portion of the riparian resources have been disturbed at the bridge and oil pipeline crossing along the Dalton Highway, the remainder of the riparian habitat is undisturbed and is

¹⁴ <http://www.adfg.alaska.gov/index.cfm?adfg=ffinventory.main>

Upper Kanuti River

		expected to be in a fully functional condition.
Important	No	Species of fish present and the riparian community that is integral to the function of this aquatic habitat are typical of the area, with only locally significant qualities.
Wildlife	Yes/No	Rationale
Relevant	Yes	<p>The nominated area meets the relevance criteria for caribou habitat. A small, non-migratory caribou herd inhabits the headwaters of the Kanuti and Jim Rivers.</p> <p>The nominated area meets the relevance criteria for raptor habitat. The above description of known raptor habitat, in combination with the results of the 2010 BLM raptor survey (survey results indicate a number of sticknests in this area, including golden eagle nests), suggest that the area is important raptor habitat.</p>
Important	Yes	<p>The nominated area meets the importance criteria for caribou. The Hodzana Hills Caribou Herd is a genetically distinct herd that contributes to the ecological diversity of the Central Yukon Planning Area.</p> <p>The nominated area does not meet the importance criteria for raptor habitat. Although the habitat is present, the number of inhabiting raptors is not great enough to justify special protection in the nominated ACEC area.</p>
Special Status Species	Yes/No	Rationale
Relevant	Yes	The nominated area meets the criteria for special status species and communities. Two rare plants are known to be near the Kanuti Hot Springs ACEC. In addition, as noted above in the nominated ACEC description, sensitive animal species are known to inhabit the area (including blackpoll warbler and olive-sided flycatcher).
Important	No	This area would not meet the importance criteria for special status species. The known rare plant species in the area (which are mostly centralized around the Kanuti Hot Springs) are not listed on the BLM Alaska Sensitive Species list. Although the blackpoll warbler and olive-sided flycatcher are known to inhabit the area, it is not likely that the habitat in the ACEC area is crucial to the extent that ACEC designation would be warranted on this basis alone.
Cultural	Yes/No	Rationale
Relevant	Yes	The nominated ACEC contains significant densities of prehistoric cultural resources. Current known distribution indicates site densities in the Kanuti River drainage. Site densities and high probability terrain for holding prehistoric sites likely account for less than 10 percent of the nominated ACEC.
Important	Yes	Distribution of known sites and high probability terrain in this large nominated ACEC is limited to a small portion. Significant sites have been identified, and several sites have already been excavated, with little research potential remaining. Additional significant sites are likely to be found in the nominated ACEC.

3.3.16 Kanuti Hot Springs ACEC

Background: The Kanuti Hot Springs ACEC was designated in 1991 through the ROD for the Utility Corridor RMP/EIS (BLM 1991). This ACEC is in the Upper Kanuti River nomination. It is on all State-selected land, and PLO 399 applies.

The current management objective of this ACEC is to protect the hot springs and the associated meadow habitat. The current management practices and allowable uses are as follows:

- Leasing and development is restricted to actions that would not directly affect the hot springs, any identified crucial wildlife habitat, and rare, endangered, or listed plant species.
- The ACEC is closed to mineral entry. Also closed are the surrounding lands (a total of approximately 160 acres) under PLO 399 of August 20, 1947, which withdrew from entry and all forms of appropriation all hot springs in Alaska.
- No-surface occupancy stipulations apply for mineral leasing within the ACEC.
- The water quality of the spring area is maintained and adheres to Environmental Protection Agency and State water quality standards. All surface-disturbing activities having any effect on the resources in the ACEC require plans of operation and appropriate mitigation to eliminate or minimize any adverse impacts.
- The ACEC is closed to gravel extraction.

Nominator: BLM

Rationale for nomination provided by the nominator: The Kanuti Hot Springs ACEC was reevaluated against the criteria for ACEC designation and the unique characteristics below.

According to the Utility Corridor RMP/EIS (BLM 1991), the current ACEC was designated for the following characteristics and concerns: Kanuti Hot Springs is the only undeveloped hot springs known to occur on BLM-managed land in the Utility Corridor Planning Area. It is approximately 5 miles southwest of Caribou Mountain, along the Kanuti River. The spring temperature has been reported by some sources to be about 150 degrees Fahrenheit and to have a strong sulphur dioxide odor. However, in December of 1988, BLM personnel measured the spring temperature at 125 degrees Fahrenheit in the main outlet and 73 degrees in the lesser outlet.

The hot springs are about 8 miles west of and are accessible from the Dalton Highway. There is an immediate need for special management attention in order to protect this undeveloped spring, since hot springs in Alaska's interior are usually developed (BLM 1991).

Area nominated: The current Kanuti Hot Springs ACEC, as described in the Utility Corridor RMP/EIS (BLM 1991), is 40 acres. It is in the Upper Kanuti River nomination, which is evaluated separately. See **Figure 6**, Existing and Nominated ACECs/RNAs – South Dalton.

Values nominated: Soil, water, fish/riparian, geology

Kanuti Hot Springs ACEC

Soil	Yes/No	Rationale
Relevant	Yes	The system of soil and hydrologic processes associated with the Kanuti River Hot Springs ACEC are rare in the planning area and are sensitive to change.
Important	Yes	Soil and water resources in the Kanuti Hot Springs ACEC are generally pristine and undisturbed. The soil and water characteristics are rare in the planning area and are highly susceptible to erosion or other soil movement caused by disturbance of the ground cover.
Water	Yes/No	Rationale
Relevant	Yes	See <i>Soil</i> above.
Important	Yes	See <i>Soil</i> above. Adhering to the mandates of the Clean Water Act is a national priority.
Fish/Riparian	Yes/No	Rationale
Relevant	Yes	The ADFG's freshwater fish inventory database ¹⁵ lists arctic grayling in the Kanuti River watershed, upstream of the Kanuti Hot Springs at the Dalton Highway. A 2005 BLM open file report (BLM 2005) lists burbot, round whitefish, northern pike, slimy sculpin, and arctic grayling in the Kanuti River. The ADFG does not list the Kanuti River in the ACEC as anadromous (ADFG 2014). The status of riparian resources has not been documented; however, due to lack of disturbance in the current ACEC, riparian resources are expected to be pristine and fully functional.
Important	No	Species of fish in the riparian community, which is integral to the function of this aquatic habitat, are typical of the area, with only locally significant qualities.
Geology	Yes/No	Rationale
Relevant	Yes	Hot springs are a unique geologic feature.
Important	No	Hot springs are not a high value geologic feature.

3.3.17 Upper Teedriinjik (Chandalar) River

Background: During the scoping process for the CYRMP, the BLM received overlapping nominations from several entities for the upper Teedriinjik (Chandalar) River. The BLM's nominated area is the largest and encompasses the other nominated areas. Mr. Matthew Gilbert's nomination includes the western end of the Venetie Block, including the mouth of the river's east fork and the south slopes of Thazzik Mountain.

Nominators: BLM, Mr. Matthew Gilbert, USFWS (Yukon Flats NWR)

¹⁵ <http://www.adfg.alaska.gov/index.cfm?adfg=ffinventory.main>

Rationale for nomination provided by the nominators:

BLM

The Teedriinjik (Chandalar) River is recognized as providing a significant contribution to the overall Yukon River Basin Chinook salmon stock and is considered one of the more productive Chinook salmon streams in the U.S. portion of the Yukon River (Eiler et al. 2006). Based on estimates derived from the distribution of radio-tagged Chinook, Eiler et al. (2006) found the contribution of the Teedriinjik (Chandalar) River to be 4 percent of the overall Yukon River Chinook salmon stock. This is on par with the Chena, Salcha, and Goodpaster Rivers, which are recognized as some of the more productive streams within the U.S. portion of the Yukon River (Eiler et al. 2006). The Teedriinjik (Chandalar) River also provides habitat for the largest population of fall chum salmon in the Yukon River basin: the number of spawners often account for 25 to 30 percent of the Yukon River fall chum salmon run (JTC 2012, Melegari 2011). The BLM currently manages about 14 miles of the Teedriinjik (Chandalar) River, extending from the confluence of the East Fork of the Chandalar, upstream to the mouth of Schilling Creek.

Mr. Gilbert

The Teedriinjik (Chandalar) River has significant cultural value and is an important cultural resource for Alaska Native residents of the Venetie. According to interviews conducted by Mr. Gilbert with traditional leaders, this area is heavily used by Alaska Natives. Interviews identified specific lookout spots and strategic hunting ground in this area for moose hunting. He describes his disinterest in development of the area, as it would conflict with moose hunting. Mr. Gilbert provided additional documentation of these interviews, including maps.

USFWS

The nominated area provides a fisheries resource and other essential resources for the communities of Venetie, Arctic Village, and Fort Yukon. Residents use the elevated bluff habitat in the nominated area (including Chuttoh Bluffs) from the East Fork Chandalar River to Caro for other subsistence resources, specifically moose and furbearers.

The Teedriinjik (Chandalar) River contributes 2 to 4 percent of the statewide run of Yukon River Chinook salmon, and the nominated area is essential spawning/migrating habitat. The Teedriinjik (Chandalar) River contributes one-third of the entire Yukon River fall chum run, and the nominated area is essential spawning/migrating habitat. The physical attributes of the nominated area (water upwelling feature) contribute to significant fisheries. Significant fall chum and Chinook salmon fishery habitats in the nominated area have regional and statewide food availability implications for all Yukon River drainage users. Fishery habitats in the nominated area are unique and of special worth due to the high fisheries production, with special emphasis on fall chum salmon. Recent research indicates that upwelling waters, water quality, and channel morphology are likely responsible for unique fall chum and Chinook salmon habitat features. These fragile fishery habitats are sensitive to upstream impacts that may affect water quality and quantity.

Area nominated: The total nominated area encompasses 295,000 acres. See **Figure 6**, Existing and Nominated ACECs/RNAs – South Dalton, and **Figure 7**, ACECs found to Meet the Relevance and Importance Criteria – South Dalton.

Values nominated: Soil, water, fish/riparian, cultural

Upper Teedriinjik (Chandalar) River

Soil	Yes/No	Rationale
Relevant	Yes	The system of upwelling and downwelling areas associated with salmon spawning in the Upper Teedriinjik (Chandalar) River nomination are rare to the planning area. They encompass soil, water, riparian, and wetland resources. They support a unique incubation, rearing, and overwintering habitat essential for maintaining chum and Chinook salmon diversity in the planning area and Alaska as a whole.
Important	Yes	While soil resources in the Upper (Chandalar) River nomination are generally pristine and undisturbed and would be considered unique on a national scale, they are not unique in the planning area or region. However, permafrost underlies much of the Upper Teedriinjik (Chandalar) River nomination. These soils are highly susceptible to erosion or other soil movement caused by disturbance of the ground cover and subsequent thawing of permafrost. In addition, the unique and fragile soils around the upwelling and downwelling areas associated with chum and Chinook salmon spawning control the hydrology of the salmon spawning areas. Any disturbance of these soils would affect the spawning area's flow regime and would negatively affect salmon egg survival.
Water	Yes/No	Rationale
Relevant	Yes	See <i>Soil</i> above.
Important	Yes	While water quality in the nominated Upper Teedriinjik (Chandalar) River nomination is excellent and would be considered unique on a national scale, it is not unique in the planning area or region. However, the upwelling and downwelling areas associated with chum and Chinook salmon spawning areas provide water for incubation and rearing of salmon and are unique in the planning area and Alaska. Maintaining water quality and temperature and adequate streamflows in these spawning areas is crucial for the incubation of salmon eggs and maintaining crucial overwintering habitat. Adhering to the mandates of the Clean Water Act is a national priority.
Fish/Riparian	Yes/No	Rationale
Relevant	Yes	The ADFG's Freshwater Fish Inventory database ¹⁶ lists arctic grayling, burbot, round whitefish, slimy sculpin, longnose sucker, and northern pike in the Teedriinjik (Chandalar) River drainage, in the vicinity of the nominated ACEC. The <i>Catalog of Waters Important for Spawning, Rearing, or Migration of Anadromous Fishes – Interior Region, Effective June 1, 2014</i> lists Chinook and chum salmon as using the Teedriinjik (Chandalar) River for spawning habitat. The status of riparian resources has not been documented; however, due to lack of disturbance in the current ACEC, riparian resources are expected to be pristine and fully functional.
Important	Yes	These waters provide crucial spawning and rearing habitat for Chinook and chum salmon. Recent research indicates that upwelling waters, water quality, and channel morphology are likely responsible for unique fall chum and Chinook salmon habitat features. Salmon produced in this nominated ACEC contribute to the availability and abundance of subsistence fish

¹⁶ <http://www.adfg.alaska.gov/index.cfm?adfg=ffinventory.main>

Upper Teedriinjik (Chandalar) River

		<p>harvested in the lower Teedriinjik (Chandalar) and Yukon Rivers. In addition, these fish play a small but important role in the overall genetic health of salmon produced in the Yukon Basin.</p> <p>Riparian resources are integral to the overall condition and quality of this important aquatic habitat. This is due to their performance of ecological functions, which define sediment transport processes, biochemical and nutrient cycling, and food web maintenance. In addition, riparian resources, when viewed independently of other resources, constitute only 3 percent of the BLM-managed lands in the planning area, which could be considered somewhat rare on a regional basis. Riparian resources perform a disproportionate number of biological and physical functions on a unit area basis. Because of this, protection is warranted in order to satisfy national priorities related to water quality, land health, floodplain function, and biodiversity maintenance.</p>
Cultural	Yes/No	Rationale
Relevant	No	While this location may play an important role in local subsistence, there are few known cultural resources. The presence of sacred sites or potential Traditional Cultural Properties must be considered; however, it is not likely that an entire drainage would be considered a Traditional Cultural Property or sacred site. These are typically discrete landforms or specific locations relating to traditional religious practices or significant events in the traditional belief system, such as places of cultural origin. (Cultural significance should not be confused with subsistence importance because subsistence use is accounted for under a unique set of laws and regulations.)
Important	No	There are no identified cultural resources in this area that meet the criteria for inclusion on the NRHP.

3.3.18 Alatna River

Background: During the scoping process for the CYRMP, the BLM received an ACEC nomination from the USFWS for Alatna River.

Nominator: USFWS (Fairbanks Fish and Wildlife Field Office)

Rationale for nomination provided by the nominator: The USFWS has provided rationale indicating that the nominated ACEC contains crucial spawning habitats for all five whitefish species in the Upper Koyukuk River drainage: sheefish (inconnu), broad whitefish, humpback whitefish, least cisco, and round whitefish. Additionally, these species are primary subsistence food for the residents of all the villages in the Koyukuk River drainage.

The nominated area of the Alatna River is prime spawning habitat, which supports the main subsistence fishery resources for villagers in the upper Koyukuk River drainage area. Whitefish species make up more than 85 percent of the non-salmon fish harvests in the entire drainage; the nominated area is essential spawning habitat for this fishery.

The nominated area is the only documented location in the upper Koyukuk River drainage where sheefish (iconnu) and broad whitefish spawn. Additionally, this is the only spawning reach on BLM-managed lands in the entire upper Koyukuk River drainage that supports all five whitefish species.

The USFWS suggests implementing management measures that would maintain the current habitat conditions, which appear to be suitable to meet fishery resource needs. Should land use activities change in the future, resource protection strategies should be implemented, including prohibiting in-stream activities that could impact the fisheries and establishing significant riparian buffers of 100 feet or more. Because the whitefish that spawn in this portion of the Alatna River are a shared resource with the Kanuti NWR, the BLM could consider working directly with the refuge to establish appropriate resource management measures.

Area nominated: As described by the USFWS, the nominated area is the segment of the Alatna River in Township 16 North, Range 25, East Kateel River Meridian Sections 19, 20, 28, 29, 30, and 33. The nominated Alatna River ACEC is 5,500 acres. See **Figure 8**, Existing and Nominated ACECs/RNAs – Indian River, and **Figure 9**, ACECs found to Meet the Relevance and Importance Criteria – Indian River.

Values nominated: Soil, water, fish/riparian

Alatna River

Soil	Yes/No	Rationale
Relevant	Yes	The hydrologic system in areas associated with whitefish spawning in the Alatna River nomination encompass soil, water, riparian, and wetland resources. These are rare in the planning area and support a unique incubation, rearing, and overwintering habitat essential for maintaining whitefish species diversity in the planning area and Alaska.
Important	Yes	While soil resources in the Alatna River nomination are generally pristine and undisturbed and would be considered unique on a national scale, they are not unique in the planning area or region. However, permafrost underlies much of the Alatna River nomination. These soils are highly susceptible to erosion or other soil movement caused by disturbance of the ground cover and subsequent thawing of permafrost. In addition, the soils around whitefish spawning areas in the nomination are unique and fragile. Any disturbance would affect the spawning area's flow regime and would negatively affect whitefish egg survival.
Water	Yes/No	Rationale
Relevant	Yes	See <i>Soil</i> above.
Important	Yes	While water quality in the nominated Alatna River is excellent and would be considered unique on a national scale, it is not unique in the planning area or region. The hydrologic system associated with whitefish spawning areas, which provide water for whitefish incubation and rearing, are unique in the planning area and Alaska. Maintaining water quality and temperature and adequate streamflows in these spawning areas is crucial in the incubation of whitefish eggs. Adhering to the mandates of the Clean Water Act is a national priority.

Alatna River

<i>Fish/Riparian</i>	Yes/No	Rationale
Relevant	Yes	The ADFG's <i>Atlas to the Catalog of Waters Important for Spawning, Rearing, or Migration of Anadromous Fishes – Interior Region, Effective June 1, 2014</i> lists Chinook and chum salmon as using the Alatna River at the nominated ACEC site for spawning; coho salmon are also listed at this location. The USFWS nomination indicates that the nominated ACEC contains crucial spawning habitat for five whitefish species—sheefish (iconnu), broad whitefish, humpback whitefish, least cisco, round whitefish—in the Upper Koyukuk River drainage. The status of riparian resources has not been documented; however, due to minimal disturbance in the nominated ACEC, riparian resources are expected to be fully functional.
Important	Yes	<p>The nominated ACEC encompasses the only spawning reach on BLM-managed lands in the entire upper Koyukuk River drainage that supports all five whitefish species. This area is also the only documented location in the upper Koyukuk River drainage where sheefish (inconnu) and broad whitefish spawn.</p> <p>Riparian resources' ecological functions are integral to the overall condition and quality of this important aquatic habitat. This is because they define sediment transport processes, biochemical and nutrient cycling, and food web maintenance. In addition, riparian resources, when viewed independently of other resources, constitute only 3 percent of the BLM-managed lands in the planning area, which could be considered somewhat rare on a regional basis. Riparian resources perform a disproportionate number of biological and physical functions on a unit area basis. Because of this, protection is warranted in order to satisfy national priorities related to water quality, land health, floodplain function, and biodiversity maintenance.</p>

3.3.19 Indian River ACEC (Including Expansion)

Background: The Indian River ACEC was designated in 1986 through the ROD for the CYRMP (BLM 1986). In 2014, through the scoping process for the CYRMP, the BLM proposed expanding the Indian River ACEC to include 18,000 additional acres.

Nominator: BLM

Rationale for nomination provided by nominator: The Indian River ACEC and expansion was reevaluated against the criteria for ACEC designation and its unique characteristics below.

In 1986, after recognizing that the Indian River supported a substantial number of chum salmon and a smaller number of Chinook salmon, the BLM designated the upper portion of the Indian River watershed as an ACEC (BLM 1986). Recent aerial escapement surveys conducted in 2011 and 2012 documented 3,979 and 24,833 summer chum in the Indian River (ADFG aerial survey database). Numbers of adult Chinook salmon observed during aerial surveys of the river have been as follows: 38 (Barton 1984), 93 (Barton 1984), 5 (BLM 1993 unpublished data), and 12 (ADFG 2012 aerial survey database).

Following a cursory inventory of the ACEC in 1993, it was determined that a substantial number of summer chum salmon spawned in the Indian River downstream of the lower most ACEC boundary. It is estimated that no more than 25% of the chum salmon spawning that takes place within the drainage occurs within the existing ACEC boundary (Kretsinger and Will 1995). As a means to protect the important salmon spawning habitat found within the drainage, BLM proposes to expand the boundary of the existing ACEC to include approximately ten additional miles of the lower Indian River.

Area nominated: The current Indian River ACEC is 158,000 acres¹⁷. The expansion of this ACEC will add 18,000 acres, for a total of 176,000 acres. See **Figure 8**, Existing and Nominated ACECs/RNAs – Indian River, and **Figure 9**, ACECs found to Meet the Relevance and Importance Criteria – Indian River.

Values nominated: Soil, water, fish/riparian

Indian River ACEC (Including Expansion)

<i>Soil</i>	Yes/No	Rationale
Relevant	Yes	The system of upwelling and downwelling areas associated with salmon spawning, encompassing soil, water, riparian, and wetland resources, are rare to the planning area. It supports a unique incubation, rearing, and overwintering habitat essential for maintaining chum and Chinook salmon diversity in the planning area and Alaska.
Important	Yes	While soil resources in the Indian River ACEC are generally pristine and undisturbed and would be considered unique on a national scale, they are not unique in the planning area or region. However, permafrost underlies much of the Indian River ACEC. These soils are highly susceptible to erosion or other soil movement caused by disturbance of the ground cover and subsequent thawing of permafrost. In addition, the unique and fragile soils around the upwelling and downwelling areas associated with chum and Chinook salmon spawning control the hydrology of the salmon spawning areas. Any disturbance of these soils would affect the spawning area's flow regime and would negatively affect salmon egg survival.
<i>Water</i>	Yes/No	Rationale
Relevant	Yes	See <i>Soil</i> above.
Important	Yes	While water quality in the nominated Indian River ACEC is excellent and would be considered unique on a national scale, it is not unique in the planning area or region. However, the upwelling and downwelling areas associated with chum and Chinook salmon spawning areas provide water for incubation and rearing of salmon; these areas are unique in the planning area and Alaska. Maintaining water quality and temperature and adequate streamflows in these spawning areas is crucial in the incubation of salmon eggs and maintaining crucial overwintering habitat. Adhering to the mandates of the Clean Water Act is a national priority.

¹⁷ The 1986 CYRMP identified approximately 155,390 acres as the ACEC. The acreage discrepancy is due to improved mapping and not a difference in the area intended to be designated as an ACEC.

Indian River ACEC (Including Expansion)

<i>Fish/Riparian</i>	<i>Yes/No</i>	<i>Rationale</i>
Relevant	Yes	The ADFG's <i>Catalog of Waters Important for Spawning, Rearing, or Migration of Anadromous Fishes – Interior Region, Effective June 1, 2014</i> lists Chinook and chum salmon as using the Indian River for spawning habitat and Chinook salmon using this river as rearing habitat. The status of riparian resources has not been documented. However, due to minimal disturbance in the nominated ACEC, riparian resources are expected to be fully functional.
Important	Yes	<p>The Indian River provides high quality spawning habitat for chum salmon, and to a more limited extent, Chinook salmon. Salmon produced in this nominated ACEC contribute to the availability and abundance of subsistence fish resources harvested in the lower Koyukuk and Yukon Rivers. In addition, these fish play a small but important role in the overall genetic health of salmon produced within the Yukon Basin.</p> <p>Riparian resources' ecological functions are integral to the overall condition and quality of this important aquatic habitat. This is because they define sediment transport processes, biochemical and nutrient cycling, and food web maintenance. In addition, riparian resources, when viewed independently of other resources, constitute only 3 percent of the BLM-managed lands in the planning area, which could be considered somewhat rare on a regional basis. Riparian resources perform a disproportionate number of biological and physical functions on a unit area basis. Because of this, protection is warranted in order to satisfy national priorities related to water quality, land health, floodplain function, and biodiversity maintenance.</p>

3.3.20 Koyukuk River Tributaries

Background: During the 2014 scoping process for the CYRMP, the BLM received an ACEC nomination from the Koyukuk Tribal Council for the watersheds of the Koyukuk River and its tributaries. PLOs 5179 and 5173 close the river and tributaries to mineral entry and mineral leasing.

Nominator: The Koyukuk Tribal Council

Rationale for nomination provided by nominator: The following rationale has been provided by the Koyukuk Tribal Council in support of the ACEC nomination for the Koyukuk River and its tributaries.

This area holds significant historical and cultural value to the Koyukukon People. Its fish and wildlife species are important for subsistence use. The ecological process of this region support subsistence and tribal traditions. BLM mining and natural hazards due to climate change pose potential threats to this area.

Area nominated: Watersheds of the Koyukuk River tributaries, including portions of Baathbakdizuni Creek, Hughes Creek, Indian River, Pocahontas Creek, Raven Creek, Atla Creek,

Hogatzakhatak River, and unnamed tributaries. The nominated area is 174,000 acres. See **Figure 8**, Existing and Nominated ACECs/RNAs – Indian River, **Figure 10**, Existing and Nominated ACECs/RNAs – Hogatza, and **Figure 16**, Existing and Nominated ACECs/RNAs – Lower Yukon.

Values nominated: Fish/riparian, wildlife, cultural

Koyukuk River Tributaries

<i>Fish/Riparian</i>	Yes/No	Rationale
Relevant	Yes	The area that satisfies the relevance criteria is encompassed in the Indian River ACEC and expansion and Alatna River nomination. See the evaluation for these areas.
Important	No	The area that satisfies the importance criteria is encompassed in the Indian River ACEC and expansion and Alatna River nomination. See the evaluation for these areas.
<i>Wildlife</i>	Yes/No	Rationale
Relevant	No	Not enough information provided by the nominator and no data for relevant wildlife values.
Important	No	Not enough information provided by the nominator and no data for important wildlife values.
<i>Cultural</i>	Yes/No	Rationale
Relevant	No	While this location may play an important role in local subsistence, there are no known cultural resources in the Hogatzakhatak Creek River drainage. Nearby known sites are attributable to mining in the Hogatza River drainage. The presence of sacred sites or potential Traditional Cultural Properties must be considered. However, it is unlikely that an entire drainage would be considered a Traditional Cultural Property or sacred site, which are typically discrete landforms or specific locations relating to traditional religious practices or significant events in the traditional belief system, such as places of cultural origin. Cultural significance should not be confused with subsistence importance; this is because subsistence use is accounted for under a unique set of laws and regulations.
Important	No	There are no known sites in the nominated area that meet the criteria for inclusion on the NRHP.

3.3.21 Lake Todatonten Pingos RNA

Background: The Lake Todatonten Pingos RNA was designated in 1986 through the ROD for the CYRMP (BLM 1986).

All lands in the RNA are State selected but are low priority. The Lake Todatonten Special Management Area and the Lake Todatonten Pingos and Summit RNAs are geographically close to one another but do not overlap. However, the Lake Todatonten Pingos RNA does border the special management area on the south side for 0.5 mile.

Nominator: BLM

Rationale for nomination provided by nominator: The Lake Todatonten Pingos RNA was reevaluated against the criteria for ACEC and RNA designation and the unique characteristics below.

As stated in the 1983 Central Yukon Management Situation Analysis, the Lake Todatonten Pingos RNA was designated because of the unique and valuable features and characteristics below. This RNA was reevaluated using the rationale used in the original RNA proposal.

Elevations of the Lake Todatonten Pingos RNA range from approximately 180 meters (590 feet) along the stream flowing north for approximately another mile into Lake Todatonten, to over 396 meters (1,300 feet) on the summit of the watershed west of the pingos. The longest pingo in the southeast quarter of Section 19 is approximately 80 meters (263 feet) long on the north-south axis and approximately 55 meters (180 feet) on the east-west axis. This pingo was just over 13 meters (43 feet) tall from its base.

The second pingo in this RNA had an irregularly collapsing summit, with a half-cratered rim. No water was trapped in the summit crater because there was not an entire unbreached basin. This second half-cratered pingo is nearly 70 meters (230 feet) long along the north-south axis and 70 meters (230 feet) on the east-west axis. This pingo is approximately 9 meters (30 feet) tall.

The vegetation on the longer pingo is a black spruce forest and woodland on the north-facing slope, mixed open birch forest on the east and west aspects, and a few large white spruce trees on the south-facing upper slope. Other species, especially on the lower slopes of this pingo, are *Vaccinium vitis-idea*, *Ledum palustre* var. *decumbens*, *Spirea beauvardiana*, *Rubus chamaemorus*, *Geocaulon lividum*, *Oxycoccus microcarpus*, and *Pedicularis* ssp. This pingo is marked around its base by a concentric slight depression, accentuated by the luxuriant growth of lichens, especially *Cladina stelaria*, and other *Cladina* and *Cladonia* species. The half-cratered pingo has a steeper south slope, with large, old-growth white spruce on it. The steepest part of the slope is nearly 30 degrees and is made up of loose gravel and sand. The depth to frozen sediment was at least 1.5 meters (4.8 feet) in late June 1983.

This RNA was originally recommended because it contains the hydrologic recharge area that is presumably feeding the pingo system. Any disruption of this hydrologic system would probably severely disrupt or cause premature collapse of the pingos systems in the nominated RNA.

Area nominated: The current Lake Todatonten Pingos RNA is 660 acres. See **Figure 8**, Existing and Nominated ACECs/RNAs – Indian River, and **Figure 9**, ACECs found to Meet the Relevance and Importance Criteria – Indian River.

Values nominated: Soil, water, vegetation, geology

Lake Todatonten Pingos RNA

Soil	Yes/No	Rationale
Relevant	Yes	As noted in the original designation, the Lake Todatonten Pingos RNA has a system of soil and hydrologic processes associated with the system of pingos. This system is rare to the planning area and is sensitive to change.

Lake Todatonten Pingos RNA

Important	Yes	Soil and water resources in the Lake Todatonten Pingos RNA are generally pristine and undisturbed. The soil and water characteristics that create the system of pingos are rare to the planning area and are highly susceptible to erosion or other soil movement caused by disturbance of the ground cover. No national priority concerns are known for this area.
RNA Characteristics	Yes	The soil and water characteristics in the Lake Todatonten Pingos RNA are unusual to the planning area.
RNA Size	No	The nature of pingo system features is that they are small. However, if multiple pingo systems (South Todatonten Summit RNA) were incorporated into the RNA, they would be of adequate size for scientific study.
Water	Yes/No	Rationale
Relevant	Yes	See <i>Soil</i> above.
Important	Yes	See <i>Soil</i> above. Adhering to the mandates of the Clean Water Act is a national priority.
RNA Characteristics	Yes	See <i>Soil</i> above.
RNA Size	No	See <i>Soil</i> above.
Vegetation	Yes/No	Rationale
Relevant	Yes	The area would meet the relevance criteria because the pingos and their associated vegetation and habitat represent a natural system that is sensitive and rare.
Important	Yes	The pingo-related biological communities are considered irreplaceable, exemplary, unique, and vulnerable. This is because pingos are permafrost features that can be altered by changes in climate. The pingo geography is unique in that it creates topographic relief on an otherwise relatively flat landscape and therefore islands with specialized biological communities that depend on slope and aspect.
RNA Characteristics	Yes	Forested pingos are unique landforms and community types and include unusual plant assemblages.
RNA Size	No	The nature of pingo system features is that they are small. However, if multiple pingo systems (South Todatonten Summit RNA) were incorporated into the RNA, they would be of adequate size for scientific study.
Geology	Yes/No	Rationale
Relevant	Yes	The pingos are of geologic interest.
Important	No	Pingos are always changing, and there is no record of their continued existence in this RNA. It is quite possible that this RNA is no longer needed for geologic reasons.
RNA Characteristics	Yes	Pingos are common to arctic and subarctic environments throughout the Northern Hemisphere.
RNA Size	NA	Not necessary for geology.

3.3.22 Mentanontli River/Lake Todatonten

Background: During the scoping process for the CYRMP, the BLM received an ACEC nomination from the USFWS for Mentanontli River/Lake Todatonten. The nominated ACEC overlaps the Lake Todatonten Special Area Management.

Nominator: USFWS (Fairbanks Fish and Wildlife Field Office)

Rationale for nomination provided by nominator: The USFWS has provided rationale indicating that the nominated ACEC contains a summer feeding ground and migratory habitat for humpback whitefish and waterfowl. Additionally, this nomination provides information indicating that this area holds cultural value for subsistence use.

The nominated Mentanontli River ACEC overlaps with the Lake Todatonten Special Management Area. This designated area provides a rich habitat for wildlife and waterfowl and is used primarily for subsistence hunting by residents of local villages.

The Mentanontli River is a distinct migration route from lake habitat (Lake Todatonten), where fish feed in spring and summer, to riverine habitats in the fall throughout the Upper Koyukuk River drainage.

Lake Todatonten provides a crucial feeding area for humpback whitefish, an important subsistence species in the upper Koyukuk River drainage. Congress designated the lake as a Special Management Area due to its unusually rich habitat for wildlife and waterfowl. The Mentanontli River is the only fish migratory corridor to Lake Todatonten.

Research on humpback whitefish in the Koyukuk River drainage indicates that fish exhibit feeding site fidelity and very few individuals will search for a new feeding habitat once they have found one. Therefore, the BLM should implement management measures that would maintain the current habitat conditions at Lake Todatonten (e.g., water quality, quantity, and fish passage). Should land use activities change in the future, the BLM should implement resource protection strategies, such as prohibiting in-stream activities that could impact the fisheries, establishing significant (100 feet or more) riparian buffers, and managing access.

There are resources that are shared with the Kanuti NWR, so the BLM should consider working directly with the refuge. This cooperation would establish appropriate resource management measures for the whitefish that travel in this migratory corridor and feed in the lake. It also would establish management for migratory birds that may use the lake for breeding, nesting, and molting.

Area nominated: As described in the USFWS ACEC nomination form, the Mentanontli River is in Township 9 North Range 27, East Kateel River Meridian Sections 3, 4, 9, 10, 15, 16, 21, 22, 25, 26, 27, and 28; Township 10 North, Range 27, East Kateel River Meridian Sections 3, 10, 15, 21, 22, 28, and 33; Township 11 North, Range 27, East Kateel River Meridian Sections 13, 23, 24, 26, 34, and 35; and Township 18 North, Range 25, West Kateel River Meridian, Sections 30 and 31. The parcel encompasses 15,000 acres, and the Lake Todatonten parcel encompasses 7,000 acres. The Mentanontli River/Lake Todatonten nomination is 22,000 total acres. See

Figure 8, Existing and Nominated ACECs/RNAs – Indian River, and **Figure 9**, ACECs found to Meet the Relevance and Importance Criteria – Indian River.

Values nominated: Fish/riparian, wildlife

Mentanontli River/Lake Todatonten

<i>Fish/Riparian</i>	Yes/No	Rationale
Relevant	Yes	As described in the nomination rationale, the Mentanontli River is a known humpback whitefish migration route. Humpback whitefish have been documented moving between Lake Todatonten and riverine habitats in the upper Koyukuk River drainage. The status of riparian resources has not been documented, but, due to lack of disturbance in the nominated ACEC, riparian resources are expected to be pristine and fully functional.
Important	Yes	<p>Key areas for fish are those habitats that support specific life stages and provide connectivity. This is because fish move between habitat types as part of their life cycle. The Mentanontli River and Lake Todatonten provide access and crucial summer feeding habitat for humpback whitefish. Data from Brown (2009) suggests that humpback whitefish in the upper Koyukuk River drainage use local rather than distant habitats once they return to spawn. Furthermore, Brown's research indicates that humpback whitefish will continue to return to the same feeding habitat once they have found a suitable location. Radio tagging data demonstrates that Lake Todatonten is such a location because it provides a crucial spring and summer feeding area for humpback whitefish. The Mentanontli River provides the only available migration route to this lake.</p> <p>Riparian resources' ecological functions are integral to the overall condition and quality of this important aquatic habitat. This is because they define sediment transport processes, biochemical and nutrient cycling, and food web maintenance. In addition, riparian resources, when viewed independently of other resources, constitute only 3 percent of the BLM-managed lands in the planning area, which could be considered somewhat rare on a regional basis. Riparian resources perform a disproportionate number of biological and physical functions on a unit area basis. Because of this, protection is warranted in order to satisfy national priorities related to water quality, land health, floodplain function, and biodiversity maintenance.</p>
<i>Wildlife</i>	Yes/No	Rationale
Relevant	No	The area was notable for its importance as a molting and nesting site for white-fronted geese in the 1990s; however, waterfowl surveys conducted since 2000 have reported no geese or only very small numbers of them.
Important	No	The area was notable for its importance as a molting and nesting site for white-fronted geese in the 1990s; however, waterfowl surveys conducted since 2000 have reported no geese or only very small numbers of them.

3.3.23 South Todatonten Summit RNA

Background: The BLM designated the South Todatonten Summit RNA in 1986 through the ROD for the CYRMP (BLM 1986).

All lands in the RNA are State selected but low priority. The Lake Todatonten Special Management Area and the Lake Todatonten Pingos and Summit RNAs are geographically close to one another but do not overlap. However, the Lake Todatonten Pingos RNA does border the special management area on the south side for 0.5 mile.

Nominator: BLM

Rationale for nomination provided by nominator: The South Todatonten Summit RNA was reevaluated against the criteria for ACEC and RNA designation and the unique characteristics below.

As stated in the 1983 Central Yukon Management Situation Analysis, the South Todatonten Summit RNA was designated because of its unique and valuable features and characteristics below. The BLM reevaluated this RNA using the rationale used in the original RNA proposal.

Elevations in the nominated South Todatonten Summit RNA range from approximately 238 meters (780 feet) along the stream leaving the area in the north to 414 meters (1,360 feet) on the watershed divide between the Lake Todatonten drainage and the creeks feeding the Melozitna River drainage to the south.

The summit crater lake had a distinct growth of floating algae on it in late June 1983. The entire upper slope and summit supports a stand of large old-growth white spruce; a few of the larger trees have begun to die or their trunks have been broken by windstorms. The interior crater wall are steeply sloping, perhaps indicating that collapse is accelerating.

The boundary configuration allows for the inclusion of the main cratered pingo itself, a very small buffer area surrounding the pingo, and the watershed and hydrological recharge area on the northwest-facing slope above the pingo. The BLM attempted to avoid the mapped route of the Tanana-Allakaket Winter Trail; however, there does appear to be some overlap based on maps, which is not currently a serious problem. The use or improvement of the trail in the northeast portion of Section 8 is not a prospective problem either because both the boundary of the RNA and the location of any improved trail could be adjusted to avoid conflicts.

Area nominated: The current South Todatonten Summit RNA is 660 acres. See **Figure 8**, Existing and Nominated ACECs/RNAs – Indian River, and **Figure 9**, ACECs found to Meet the Relevance and Importance Criteria – Indian River.

Values nominated: Soil, water, vegetation, geology

South Todatonten Summit RNA

<i>Soil</i>	Yes/No	Rationale
Relevant	Yes	As noted in the original designation, the South Todatonten Summit RNA has a system of soil and hydrologic processes associated with the system of pingos. This system is rare in the planning area and is sensitive to change.

South Todatonten Summit RNA

Important	Yes	Soil and water resources in the South Todatonten Summit RNA are generally pristine and undisturbed. The soil and water characteristics that create the system of pingos are rare to the planning area and are highly susceptible to erosion or other soil movement caused by disturbance of the ground cover. Adhering to the mandates of the Clean Water Act is a national priority.
RNA Characteristics	Yes	The soil and water characteristics in the South Todatonten Summit RNA are unusual to the planning area.
RNA Size	No	The nature of pingo system features is that they are small. However, if multiple pingo systems (e.g., Lake Todatonten Pingos RNA) were incorporated into the RNA, they would be of adequate size for scientific study.
Water	Yes/No	Rationale
Relevant	Yes	See <i>Soil</i> above.
Important	Yes	See <i>Soil</i> above.
RNA Characteristics	Yes	See <i>Soil</i> above.
RNA Size	No	See <i>Soil</i> above.
Vegetation	Yes/No	Rationale
Relevant	Yes	The area would meet the relevance criteria because the pingos and their associated vegetation and habitat represent a natural system that is sensitive and rare.
Important	Yes	The pingo-related biological communities are considered irreplaceable, exemplary, unique, or vulnerable. This is because pingos are permafrost features that can be altered by changes in climate. The pingo geography is unique in that it creates topographic relief on an otherwise relatively flat landscape; therefore, islands with specialized biological communities depend on slope and aspect.
RNA Characteristics	Yes	Forested pingos are unique landforms and community types and include unusual plant assemblages
RNA Size	No	The nature of pingo system features is that they are small. However, if multiple pingo systems (e.g., South Todatonten Summit RNA) were incorporated into the RNA, they would be of adequate size for scientific study.
Geology	Yes/No	Rationale
Relevant	Yes	The pingos are of geologic interest.
Important	No	Pingos are always changing, and there is no record of their continued existence in this RNA. It is quite possible that this RNA is no longer needed for geologic reasons.
RNA Characteristics	Yes	Pingos are common to the arctic and subarctic environments throughout the Northern Hemisphere.
RNA Size	NA	Not necessary for geology.

3.3.24 Hogatza River Tributaries ACEC

Background: The Hogatza River Tributaries ACEC was designated in 1986 through the ROD for the CYRMP (BLM 1986). The original ACEC encompassed about 42,500 acres. Since designation, some of the ACEC has been conveyed to the State of Alaska and Native

corporations. In 2014, through the scoping process for the CYRMP, the BLM proposed expanding the Hogatza River Tributaries ACEC to include an additional 56,800 acres.

Nominator: BLM

Rationale for nomination provided by the nominator: The Hogatza River Tributaries ACEC was reevaluated against the criteria for ACEC designation and the unique characteristics described below.

In 1986, the ROD for the CYRMP designated as an ACEC approximately 41 percent of the combined watersheds of Clear Creek and Caribou Creek (tributary to the Hogatza River). The purpose of the ACEC was to protect the high value summer chum salmon spawning habitat in the two drainages.

In 1994, Kretsinger et al. completed a habitat management plan for the ACEC. Tiering off the ROD for the CYRMP, the plan outlined management objectives for the 42,500-acre ACEC. Since the approval of the plan, many of the State and Native land selections have been formally conveyed and the area making up the original ACEC has been reduced to 5,200 acres. Currently, about 11,000 acres of BLM-managed land in the combined watersheds of Clear and Caribou Creeks are not included in the existing ACEC. In addition, approximately 2,700 acres of BLM-managed land in the adjoining High Creek watershed and 37,900 acres in the sub-watershed area of the main stem Hogatza River are not in the existing ACEC. These areas all provide important habitat to chum salmon.

From 1995 to 2007, salmon escapement was monitored in Clear Creek. The 12-year average chum salmon escapement for Clear Creek (from 1995 to 2007, excluding 1998) was 35,418 fish (Headlee 1996, VanHatten 1997 and 1998, Esse and Kretsinger 2009, BLM unpublished data). Escapement monitoring in Caribou Creek from 2004 to 2007 showed that the four-year average chum salmon escapement to be 17,929 fish (BLM unpublished data). An escapement survey by air of High Creek in July 1996 reported 789 chum salmon. In addition to chum salmon, Clear and Caribou Creeks are known to support both coho and Chinook salmon. Because of the high value salmon habitat in the combined drainages of Clear, Caribou, and High Creeks, the BLM recommends that the current boundary of the Hogatza River Tributaries ACEC be adjusted to include BLM-managed lands within Clear Creek and Caribou Creek, and the adjoining BLM-managed land in High Creek and the South Hogatza sub-watershed.

Area nominated: The current Hogatza River Tributaries ACEC is 5,200 acres. The BLM proposes expanding it by 56,800 acres to include BLM-managed lands Clear Creek, Caribou Creek, and High Creek. Total acreage for the adjusted ACEC boundary would be 62,000 acres. Most of the expansion is a mixture of unencumbered BLM-managed land and Native and State selections. See **Figure 10**, Existing and Nominated ACECs/RNAs – Hogatza, and **Figure 11**, ACECs found to Meet the Relevance and Importance Criteria – Hogatza.

Values nominated: Soil, water, fish/riparian

Hogatza River Tributaries ACEC

Soil	Yes/No	Rationale
Relevant	Yes	The system of upwelling and downwelling areas associated with salmon spawning in Clear, Caribou, and High Creeks in the ACEC are rare in the planning area. They encompass soil, water, riparian, and wetland resources and support a unique incubation, rearing, and overwintering habitat. This is essential for maintaining chum, coho, and Chinook salmon diversity in the planning area and Alaska.
Important	Yes	Soil resources in the Hogatza River Tributaries ACEC are generally pristine and undisturbed condition and would be considered unique on a national scale; even so, they are not unique in the planning area or region. However, permafrost underlies much of the Hogatza River Tributaries ACEC. These soils are highly susceptible to erosion or other soil movement caused by disturbance of the ground cover and subsequent thawing of permafrost. In addition, the unique and fragile soils around the upwelling and downwelling areas associated with chum and Chinook salmon spawning control the hydrology of the salmon spawning areas. Any disturbance of these soils would affect the spawning area's flow regime and would negatively affect salmon egg survival.
Water	Yes/No	Rationale
Relevant	Yes	See <i>Soil</i> above.
Important	Yes	While water quality in the nominated Hogatza River Tributaries ACEC is excellent and would be considered unique on a national scale, it is not unique in the planning area or region. However, the upwelling and downwelling areas in chum and Chinook salmon spawning areas, which provide water for incubation and rearing, are unique in the planning area and Alaska. Maintaining water quality and temperature and adequate streamflows in these spawning areas is crucial in the incubation of salmon eggs and maintaining crucial overwintering habitat. Adhering to the mandates of the Clean Water Act is a national priority.
Fish/Riparian	Yes/No	Rationale
Relevant	Yes	The nominated ACEC provides crucial habitat to three species of Pacific salmon (coho, chum, and Chinook), with occasional occurrences of a fourth species, sockeye salmon (Esse and Kretsinger 2007, ADFG 2014). Other species documented in the area are arctic grayling, northern pike, longnose sucker, slimy sculpin, burbot, Dolly Varden, arctic lamprey, and round and broad whitefish. Riparian resources, which dictate the quality, connectivity, and maintenance of the aquatic habitat in the area, are in proper functioning condition.
Important	Yes	The combination of hydrologic and geologic formative processes in the area have created a unique and highly productive aquatic environment, which provides crucial spawning and rearing habitat to a variety of salmon and other species of fish. Of the four species of salmon that inhabit the area, chum salmon are the most numerous. The combined average annual escapements for chum salmon in Clear and Caribou Creeks are in excess of 50,000 fish (see data presented previously in the <i>Rational for nomination provided by the nominator</i>). Salmon produced in this nominated ACEC contribute to the availability and abundance of subsistence fish resources harvested in the lower Koyukuk and Yukon Rivers. In addition, these fish play a small but important role in the overall genetic health of salmon

Hogatza River Tributaries ACEC

		<p>produced in the Yukon Basin. Lastly, the chum salmon spawning in the Clear Creek drainage are on the watch list for BLM special status species. This is based on the vulnerability of their spawning habitat to impacts from upstream mining.</p> <p>Riparian resources, through their performance of ecological functions, are integral to the overall condition and quality of this important aquatic habitat. This is because they define sediment transport processes, biochemical and nutrient cycling, and food web maintenance. In addition, riparian resources, when viewed independently of other resources, constitute only 3 percent of the BLM-managed lands in the planning area, which could be considered somewhat rare on a regional basis. Riparian resources perform a disproportionate number of biological and physical functions on a unit area basis. Because of this, protection is warranted in order to satisfy national priorities related to water quality, land health, floodplain function, and biodiversity maintenance.</p>
--	--	---

3.3.25 Klikhtentotzna Creek

Background: During scoping for the CYRMP, the BLM proposed designation of an ACEC for Klikhtentotzna Creek, a tributary to Hogatza River.

Nominator: BLM

Rationale for nomination provided by the nominator: Klikhtentotzna Creek was evaluated against the rationale provided by the BLM, below.

Klikhtentotzna Creek is a tributary to the upper Hogatza River and is being nominated for its high value summer chum salmon spawning habitat. Based on a BLM escapement survey conducted by air in 1996, the number of summer chum salmon spawning in Klikhtentotzna Creek is on par with that of Clear and Caribou Creeks (Hogatza River Tributaries ACEC), two streams recognized as providing high value spawning habitat to summer chum salmon habitat within the Koyukuk River Basin (Barton 1984, Holder and Senecal-Albrecht 1998). During the survey of Klikhtentotzna Creek on July 12, 1996, observers documented 11,690 chum salmon. In comparison, a survey of Clear and Caribou Creeks a day later documented 16,620 and 10,470 chum salmon. Land status is unencumbered BLM-managed land.

Area nominated: The nominated Klikhtentotzna Creek ACEC is 108,000 acres. See **Figure 10**, Existing and Nominated ACECs/RNAs – Hogatza, and **Figure 11**, ACECs found to Meet the Relevance and Importance Criteria – Hogatza.

Values nominated: Soil, water, fish/riparian

Klikhtentotzna Creek

Soil	Yes/No	Rationale
Relevant	Yes	The system of upwelling and downwelling areas associated with salmon spawning, in the Klikhtentotzna Creek nomination, encompassing soil, water, riparian, and wetland resources, are rare to the planning area. It supports a unique incubation, rearing, and overwintering habitat essential for maintaining chum salmon diversity in the planning area and Alaska.
Important	Yes	While soil resources in the Klikhtentotzna Creek nomination are generally pristine and undisturbed and would be considered unique on a national scale, they are not unique in the planning area or region. However, permafrost underlies much of the Klikhtentotzna Creek nomination. These soils are highly susceptible to erosion or other soil movement caused by disturbance of the ground cover and subsequent thawing of permafrost. In addition, the unique and fragile soils around the upwelling and downwelling areas associated with chum salmon spawning control the hydrology of the salmon spawning areas. Any disturbance of these soils would affect the spawning area's flow regime and would negatively affect salmon egg survival.
Water	Yes/No	Rationale
Relevant	Yes	See <i>Soil</i> above.
Important	Yes	While water quality in the nominated Klikhtentotzna Creek nomination is excellent and would be considered unique on a national scale, it is not unique in the planning area or region. The upwelling and downwelling areas associated with chum salmon spawning areas, which provide water for incubation and rearing, are unique in the planning area and Alaska. Maintaining water quality and temperature and adequate streamflows in these spawning areas is crucial in the incubation of salmon eggs and maintaining crucial overwintering habitat. Adhering to the mandates of the Clean Water Act is a national priority.
Fish/Riparian	Yes/No	Rationale
Relevant	Yes	The nominated ACEC area provides crucial spawning habitat to chum salmon. Riparian resources, which dictate the quality, connectivity, and maintenance of the aquatic habitat in the area, are in proper functioning condition.
Important	Yes	<p>As stated above, in the rationale for the nomination, the BLM conducted an escapement survey by air in 1996 and found thousands of chum salmon spawning in Klikhtentotzna Creek. Salmon produced in this nominated ACEC contribute to the availability and abundance of subsistence fish resources harvested in the lower Koyukuk and Yukon Rivers. In addition, these fish play a small but important role in the overall genetic health of salmon produced in the Yukon Basin.</p> <p>Riparian resources' ecological functions are integral to the overall condition and quality of this important aquatic habitat. This is because they define sediment transport processes, biochemical and nutrient cycling, and food web maintenance. In addition, riparian resources, when viewed independently of other resources, constitute only 3 percent of the BLM-managed lands in the planning area, which could be considered somewhat rare on a regional basis. Riparian resources perform a disproportionate number of biological and physical functions on a unit area basis. Because of</p>

Klikhtentotzna Creek

		this, protection is warranted in order to satisfy national priorities related to water quality, land health, floodplain function, and biodiversity maintenance.
--	--	---

3.3.26 Pah River

Background: During the 2014 scoping process for the CYRMP, the BLM received an ACEC nomination for the Pah River from the Ambler Native Village.

Nominator: Ambler Native Village

Rationale for nomination provided by the nominator: The Ambler Native Village has nominated the Pah River as an ACEC because of its significant cultural value and fish and wildlife resources and provides the following rationale for the nomination.

This region has a long-standing cultural history of use by the Upper Kobuk River communities, the Kuuvanmiut, for subsistence fishing and hunting. The Pah River is an important spawning area for Kobuk River sheefish (iconnu) and chum salmon. The sheefish (iconnu) that use the Pah River are believed to be a genetically unique population. Caribou from the Western Arctic Caribou Herd migrate through this region annually. There is a documented large waterfowl population. This area is a unique wetlands ecosystem, supporting fish spawning, waterfowl habitat, caribou migration, and cultural subsistence activities. It has been the gathering place for Kuuvanmiut over thousands of years. In the Arctic and Subarctic, massive areas of undisturbed wetlands are by nature sensitive, due to the extreme length of time that natural processes take, particularly to rebound from any damage. The Pah River watershed should be protected from adverse impacts that would damage the region, particularly during this time of global climate change. Much of this region is characterized by sensitive Arctic and Subarctic wetlands that would be severely damaged if certain activities were permitted, such as mining, industrial road access, and sport hunting.

Area nominated: The nominated area is the watershed of the Pah River headwaters. The Pah River is one of the major tributaries of the Kobuk River. This ACEC would be bounded by the Central Yukon Planning Area/Northwest Arctic Borough and the Continental Divide and would include 50,600 acres of land. Land status is unencumbered BLM-managed land. See **Figure 10**, Existing and Nominated ACECs/RNAs – Hogatza.

Values nominated: Fish/riparian, wildlife, cultural

Pah River

<i>Fish/Riparian</i>	<i>Yes/No</i>	<i>Rationale</i>
Relevant	Yes	The BLM has received reports of northern pike and arctic grayling being caught in the nominated ACEC by residents living near the Pah River. Chum salmon and whitefish species are noted in the State of Alaska's Anadromous Waters Catalog in the lower Pah River. Other data is lacking to support the presence of fish species in the Pah River headwaters. The ADFG does not list any fish inventory reports in the Alaska Freshwater Fish

Pah River

		Inventory for waters in the nominated ACEC. The BLM has not conducted fish inventories in the nominated ACEC. The status of riparian resources is unknown; however, due to the area's remote location, riparian resources are expected to be pristine and fully functional.
Important	No	The species of fish and the riparian community that is integral to the function of this aquatic habitat are typical of the area, with only locally significant qualities.
Wildlife	Yes/No	Rationale
Relevant	No	Species of terrestrial wildlife that are found in the area occur in a much broader area. Although caribou do migrate through that area, the area is important but not crucial to their migration and occurs throughout the upper Kobuk drainage.
Important	No	Impacts on wildlife resources in the area would not affect species distribution or population dynamics on an ecoregion or statewide level. These resources are not rare, irreplaceable, endangered, threatened, or necessarily vulnerable to adverse change beyond what all wildlife populations and habitats are facing with climate change.
Cultural	Yes/No	Rationale
Relevant	No	The Pah River, while significant to the people of the Kobuk, does not contain a significant number or density of cultural resources.
Important	No	There are no known sites in the Pah River drainage that meet the criteria for inclusion on the NRHP. In this region, the Kobuk River is the dominant waterway, a source of subsistence resources, and the location of principal settlements.

3.3.27 Wheeler Creek

Background: During the 2014 scoping process for the CYRMP, ACEC nominations were received from the BLM for the Wheeler Creek watershed and from the USFWS (Koyukuk/Nowitna NWR) for the Dakli/Wheeler Creek area. The nominated Dakli/Wheeler Creek ACEC is encompassed within the BLM's nomination for the Wheeler Creek ACEC; the larger Wheeler Creek ACEC nomination is evaluated here.

Nominators: BLM, USFWS (Koyukuk/Nowitna NWR)

Rationale for nomination provided by nominators:

BLM

Wheeler Creek is a tributary to Dakli River. The ADFG's aerial escapement data for Wheeler Creek indicates that this stream provides high value spawning habitat to summer chum salmon. Counts conducted in 1976, 1980, 1983, 1991, and 1995 were 7564, 5544, 8120, 7801, and 15843, respectively. The BLM-managed portion of this proposed ACEC is 147,000 acres, which includes the watershed area in the planning area and upstream of the Koyukuk NWR.

USFWS

Dakli and Wheeler Creeks provide important spawning and rearing habitat for chum salmon and have large numbers of returning adults. The only information available on the creek is aerial

survey data, but the data show the creeks are a major producer of chum salmon in the Koyukuk River drainage. Aerial survey data can be found at <http://sf.adfg.state.ak.us/CommFishR3/Website/AYKDBMSWebsite/DataSelection.aspx>.

The primary reason for the designation of habitat surrounding Dakli and Wheeler Creeks as an ACEC is to protect crucial spawning and rearing habitat for chum salmon. This species is used throughout Alaska for subsistence and commercial activities. Specifically, Dakli and Wheeler Creek salmon are used in villages from Huslia to the mouth of the Yukon River. This fish resource is used extensively in over 17 villages that extend from the mouth of the Yukon River. Salmon are an important subsistence species throughout the Yukon River watershed. This resource is used by many people in villages along the river system, and negative impacts on spawning and rearing habitats would affect populations beyond a local level. Protecting chum salmon spawning and rearing habitat along Dakli and Wheeler Creeks is crucial for the species' longevity.

Congress recognized the importance of salmon by naming the species specifically for conservation in the ANILCA. It mandated that salmon's natural diversity and opportunities for subsistence use be maintained. Further, Section 302(5)(B) of the ANILCA ensures water quality and quantity in refuges as one of four major purposes for which the refuges were established. Additionally, the 1997 National Wildlife Refuge Improvement Act identified the "maintenance of adequate water quantity and water quality" as one of 10 major principles set forth to conserve and protect refuge resources. The USFWS stresses the importance of upholding the refuges to maintain water quality and quantity. It highlights the concern that any activities or actions on BLM-managed lands next to refuges may compromise the USFWS's ability to meet these mandates.

Management guidelines should be provided to prevent actions that would degrade habitat and water quality and quantity. The USFWS requests that mining be limited and monitored. Mining has a high potential to negatively affect aquatic habitat and communities for long periods, with poorly documented restoration success in interior and northern Alaska (Carlson et al. 2000; Karle et al. 1998; USKH 2005a, 2005b; Weber 1986.). Resources in these watersheds are sensitive to contamination and turbidity and provide essential subsistence requirements for the residents of many rural communities. The nominated Dakli/Wheeler Creek ACEC is approximately 25,500 acres.

Area nominated: The USFWS proposes ACEC designation of the BLM-managed land that borders the northern portion of the Koyukuk NWR. The parcel surrounds Dakli and Wheeler Creeks and is approximately 50 kilometers (31 miles) northeast of the village of Huslia. The BLM proposes designation of the entire Wheeler Creek watershed. The nominated Wheeler Creek ACEC is approximately 147,000 acres. See **Figure 10**, Existing and Nominated ACECs/RNAs – Hogatza, and **Figure 11**, ACECs found to Meet the Relevance and Importance Criteria – Hogatza.

Values nominated: Soil, water, fish/riparian

Wheeler Creek

Soil	Yes/No	Rationale
Relevant	Yes	The system of upwelling and downwelling areas associated with salmon spawning in the Wheeler Creek nomination, encompassing soil, water, riparian, and wetland resources, are rare to the planning area. It supports a unique incubation, rearing, and overwintering habitat essential for maintaining chum salmon diversity in the planning area and Alaska.
Important	Yes	While soil resources in the Wheeler Creek nomination are generally pristine and undisturbed and would be considered unique on a national scale, they are not unique in the planning area or region. However, permafrost underlies much of the Wheeler Creek nomination. These soils are highly susceptible to erosion or other soil movement caused by disturbance of the ground cover and subsequent thawing of permafrost. In addition, the unique and fragile soils around the upwelling and downwelling areas associated with chum salmon spawning control the hydrology of the chum salmon spawning areas. Any disturbance of these soils would affect the spawning area's flow regime and would negatively affect salmon egg survival.
Water	Yes/No	Rationale
Relevant	Yes	See <i>Soil</i> above.
Important	Yes	While water quality in the Wheeler Creek nomination is excellent and would be considered unique on a national scale, it is not unique in the planning area or region. The upwelling and downwelling areas associated with chum salmon spawning areas that provide water for incubation and rearing of salmon are unique in the planning area and Alaska. Maintaining water quality and temperature and adequate streamflows in these spawning areas is crucial in the incubation of salmon eggs and maintaining crucial overwintering habitat. Adhering to the mandates of the Clean Water Act is a national priority.
Fish/Riparian	Yes/No	Rationale
Relevant	Yes	Aerial escapement data for Wheeler Creek indicate that this stream provides high value spawning habitat for summer chum salmon. Riparian resources in the area are in proper functioning condition.
Important	Yes	<p>Waters draining into Wheeler Creek and the Dakli River provide crucial spawning and rearing habitat for chum salmon. Those produced in these watersheds are used for subsistence and commercial purposes by residents of villages, from Huslia to the mouth of the Yukon River.</p> <p>Riparian resources' ecological functions are integral to the overall condition and quality of this important aquatic habitat. This is because they define sediment transport processes, biochemical and nutrient cycling, and food web maintenance. In addition, riparian resources, when viewed independently of other resources, constitute only 3 percent of the BLM-managed lands in the planning area, which could be considered somewhat rare on a regional basis. Riparian resources perform a disproportionate number of biological and physical functions on a unit area basis. Because of this, protection is warranted in order to satisfy national priorities related to water quality, land health, floodplain function, and biodiversity maintenance.</p>

3.3.28 Ishtalitna Creek Hot Springs RNA

Background: The BLM designated the Ishtalitna Creek Hot Springs RNA in 1986 through the ROD for the CYRMP (BLM 1986). All lands are State-selected, but low priority. PLO 399 applies. This RNA Includes part of Ishtalitna Creek to allow for water quality comparisons.

Nominator: BLM

Rationale for nomination provided by nominator: As stated in the *Management Situation Analysis Central Yukon Planning Area 1983*, the Ishtalitna Creek Hot Springs RNA was designated because of its unique and valuable features and characteristics. This RNA was reevaluated against ACEC criteria.

The Ishtalitna Creek Hot Springs flow into an elongated, nearly stagnant, slough channel pool that joins Ishtalitna Creek about 250 meters (820 feet) from the point of emergence. The elevation of Ishtalitna Creek next to the hot springs is approximately 335 meters (1,100 feet). The highest measured temperature reported for the system is approximately 58 degrees Celsius (136 degrees Fahrenheit).

A steady flow of gas bubbles has been noted in the upper portion of the pool, where a pH measurement of 8.84 has been reported (Moonman 1982). The pool itself is covered with a thick slimy mat of blue-green algae and associated bacterial growth that an iron oxide has formed on. A flat marshy area nearly 30 meters (98 feet) wide opens to the east of the pool. The west margin of the pool is crowded against a channel bank, which stands 1 to 2 meters (3 to 6 feet) above the marsh surface. A well-constructed cache, possibly built or repaired in 1981, is found in a white spruce forest to the east of the main hot springs pool.

The forest understory is dominated by *Mertensia paniculata*, *Cornus suecica*, and *Viburnum edule* and at the open edges of the marsh, *Spirea beauvardiana*. The marsh itself is dominated by the sedge *Carex aquatilis*, and two other sedges (not yet identified). *Parnassia palustris* is prominent on the wet ground, as are *Polemonium acutiflorum*, the grass *Agrostis scabra*, *Galium trifidum*, *Trientalis europea*, and *Moehringia lateriflora*. In the open area that is obviously under geothermal influence, there are the same raised areas of dry soil. *P. acutiflorum* is prominent here too, along with *Erysimum cheiranthoides*, *Geum macrophyllum*, *Achillea sibirica*, *Cerastium beringianum*, and *Epilobium hornmanii*. Several of these plant species reported from the Ishtalitna Creek Hot Springs seem, in central Alaska at least, to be restricted to or most common at hot springs.

Area nominated: Ishtalitna Creek Hot Springs RNA is currently 1,000 acres. See **Figure 12**, Existing and Nominated ACECs/RNAs – Ray Mountains, and **Figure 13**, ACECs found to Meet the Relevance and Importance Criteria – Ray Mountains.

Values nominated: Soil, water, vegetation

Ishtalitna Creek Hot Springs RNA

Soil	Yes/No	Rationale
Relevant	Yes	The system of soil and hydrologic processes associated with the Ishtalitna Creek Hot Springs are rare to the planning area and are sensitive to change.

Ishtalitna Creek Hot Springs RNA

Important	Yes	Soil and water resources in the Ishtalitna Creek Hot Springs RNA are generally in a pristine and undisturbed condition. The soil and water characteristics, which create the Ishtalitna Creek Hot Springs, are rare to the planning area and are highly susceptible to erosion or other soil movement caused by disturbance of the ground cover.
RNA Characteristics	Yes	The soil and water characteristics in the Ishtalitna Creek Hot Springs RNA are unusual to the planning area.
RNA Size	No	The nature of hot springs is that they are small. However, if multiple hot springs (e.g., the McQuesten Creek RNA) were incorporated into the RNA, they would be of adequate size for scientific study.
Water	Yes/No	Rationale
Relevant	Yes	See <i>Soil</i> above.
Important	Yes	See <i>Soil</i> above. Adhering to the mandates of the Clean Water Act is a national priority.
RNA Characteristics	Yes	See <i>Soil</i> above.
RNA Size	No	See <i>Soil</i> above.
Vegetation	Yes/No	Rationale
Relevant	Yes	The Ishtalitna Creek Hot Springs RNA meets the relevance criteria for vegetation because of the unique assemblages of plants associated with the hot springs, as noted in the RNA description.
Important	Yes	The Ishtalitna Creek Hot Springs RNA meets the importance criteria for vegetation because of the unique assemblages of plants associated with the hot springs, as noted in the RNA description.
RNA Characteristics	Yes	This RNA was identified and should be retained as an RNA because the presence of the hot springs is associated with an unusual plant or animal association.
RNA Size	Yes	Even though the area is relatively small, the area of interest (the hot springs) is in a small area that would be encompassed by the current RNA.

3.3.29 Kanuti-Kilolitna Rivers

Background: During the scoping process for the CYRMP, the BLM received an ACEC nomination from the USFWS for the Kanuti-Kilolitna Rivers.

Nominator: USFWS (Kanuti NWR)

Rationale for nomination provided by nominator: The Kanuti-Kilolitna Rivers was nominated as an ACEC because of its archaeological, cultural, fish, wildlife, and sensitive/rare natural systems (geologic-plant communities).

Historical hunting/fishing/trapping/gathering territory of aboriginal Alaska Natives: the South Fork (Koyukuk) Koyukon Athabascan, the Lake Todatonten/Kanuti River band of Koyukon Athabascan (Steven Bergman, pers. comm.), and possibly the K'iitl'it Gwich'in.¹⁸

¹⁸ http://ankn.uaf.edu/ANCR/Athabascan/AdelinePeterRaboff/Prelim_Study_Western_Gwichin

Example 1: In a post-fire archaeological survey, Corbett (2006) identified two archaeological sites and submitted them to the Alaska Heritage Resources Survey. The area of the survey was the northern Ray Mountains, primarily within the Kanuti NWR but also on BLM-managed uplands along the Kanuti-Kilolitna River in the nominated ACEC. This work and more widespread historical aboriginal occupancy (see Example 2 below) suggest that uplands in the ACEC, particularly those next to streams and rivers, are likely to yield significant densities of small archaeological sites (Bill Hedman, BLM Archaeologist, pers. comm.).

Example 2: In a July 2014 interview, Allakaket Elder Steven Bergman confirmed regular seasonal use/occupancy of the nominated Kanuti-Kilolitna River ACEC by his relatives and other Alaska Natives as recently as the twentieth century.

The area supports or has supported fish and wildlife species of environmental concern by federal or state agencies. See specific examples below.

Example 1: Within the traditional range of the Ray Mountains Caribou Herd, is a small, isolated non-migratory herd.

Example 2: Alaska's *Anadromous Waters Catalog* documents the presence of Chinook salmon in the Kanuti-Kilolitna River in the ACEC nomination.

Example 3: The USFWS (Saperstein 1999) and joint USFWS/BLM float trips (Saperstein 2000) of the Kanuti-Kilolitna River documented golden eagle occupancy/nesting in the nominated ACEC. Other unexplored suitable nesting habitat exists elsewhere in the ACEC. Golden eagle is a BLM Alaska sensitive species. In addition, these reports indicate that the ACEC supports a diversity of other raptors, including northern harrier, merlin, American kestrel, peregrine falcon (confirmed nesting), sharp-shinned hawk, great horned owl, and great gray owl.

The nominated ACEC contains parts of the Kilolitna ultramafic body in the Caribou Mountain-Melozitna ultramafic belt (Patton and Miller 1970). It also supports sensitive or uncommon plants and plant communities, based on floristic inventories in nearby areas with similar geology and soil profiles. The nominated ACEC contains scenic granite tors.

Example 1: The Kilolitna ultramafic body “harbors an unusual suite of amphi-Beringian and Asian species (some widely disjunct from their nearest locations) in communities suggestive of hypothesized cold steppe analogs” (Lipkin 2007), including a BLM-sensitive plant species, *Koeleria asiatica* (oriental junegrass). While Lipkin's report primarily documents these relict plant communities on Kanuti NWR, such flora was found on one site on BLM-managed land in the ACEC. Further, the ACEC includes additional unexplored ultramafic sites on BLM-managed lands next to sites at Kanuti NWR's southern boundary.

Example 2: ACEC contains scenic granite tors.

The upper reach of the Kanuti River supports numerous resident fish species: arctic grayling (*Thymallus arcticus*), northern pike (*Esox lucius*), burbot (*Lota lota*), round whitefish (*Prosopium cylindraceum*), long nose sucker (*Catostomus catostomus*), and slimy sculpin (*Cottus cognatus*) (Netsch 1975). In the Kanuti NWR, Brown (2006) showed that humpback whitefish (*Coregonus*

pidschian), broad whitefish (*C. nasus*), and least cisco (*C. sardinella*) are present in the Upper Kanuti River, just downstream of the eastern refuge boundary. The Upper Kanuti River is not listed as an anadromous stream.

Archaeological/cultural resources: Only a small fraction of the land in the nominated ACEC has been subjected to archaeological survey, which was largely focused on upland areas at the Kanuti NWR boundary, along the Kilolitna River. Artifacts were found despite very limited sampling, and traditional cultural knowledge documents the historic use of the ACEC by Alaska Native groups. Given that, it is not unreasonable to suspect that a more widespread and more intensive archaeological study may yield significant archaeological information, high site densities, and additional archaeological sites that are eligible for inclusion on the NRHP.

Fish/Wildlife Resources (Ray Mountains Caribou Herd): Horne et al. (2014) discuss threats to this herd based on its small population, its proximity to Dalton Highway (i.e., easier access), and its latitude, meaning that it is more quickly encountered by hunters from the more populated south.

Natural system (ultramafic sites): Lipkin (2007) reported that the ultramafic alpine sites on Kanuti NWR “contained unusual and apparently undescribed communities that are either rare or unknown elsewhere.” Aside from the one BLM ultramafic site that was visited during that survey, the flora associated with other ultramafic sites in the ACEC are unknown. The most extensive floristic survey of the Ray Mountains (Kessler 1979, *in* Farquhar and Schubert 1980) occurred south and upstream of the nominated ACEC. Other than patchy floristic reconnaissance along the Kanuti-Kilolitna River proper (e.g., Lipkin 2007 and Saperstein 2000), the flora of the nominated ACEC has been largely undocumented. Significant floristic finds both north (Lipkin, Saperstein) and south (Kessler) of the nominated ACEC suggest a possible similar significance in the ACEC.

Area nominated: Entire or parts of select hydrological (sub) units (i.e., 12-digit HUCs) within the Kanuti River watershed. This is specifically those units of the Torment Creek-Kanuti-Kilolitna River and Ishtalitna Creek drainages; these are downstream of the Tozitna River ACEC and Tozitna Subunit North ACEC but south of Kanuti NWR, excluding Doyon Regional Corporation. Tribal conveyed lands immediately south of the Kanuti NWR boundary. The nominated Kanuti-Kilolitna Rivers ACEC is 266,000 acres. See **Figure 12**, Existing and Nominated ACECs/RNAs – Ray Mountains.

Values nominated: Fish/riparian, wildlife, cultural

Kanuti-Kilolitna Rivers

<i>Fish/Riparian</i>	Yes/No	Rationale
Relevant	Yes	The ADFG lists the Kanuti-Kilolitna River as anadromous, with Chinook salmon found in the ACEC (ADFG 2014). The BLM conducted fish inventories in the Kanuti-Kilolitna River within the boundaries of the nominated ACEC and captured slimy sculpin and arctic grayling (BLM, unpublished report). The status of riparian resources is unknown; however, due to the area’s remote location, riparian resources are expected to be pristine and fully functional.

Kanuti-Kilolitna Rivers

Important	No	Species of fish present and the riparian community that is integral to the function of this aquatic habitat are typical of the area, with only locally significant qualities.
Wildlife	Yes/No	Rationale
Relevant	Yes	The area is important winter range for the Ray Mountains Caribou Herd. The area is also documented as being important golden eagle nesting habitat, with documented nests in the nominated boundary.
Important	Yes	The area is large enough that it is important to the Ray Mountains Caribou Herd.
Cultural	Yes/No	Rationale
Relevant	No	There is insufficient data to designate an area this large as an ACEC, based on the presence and significance of cultural resources. Preliminary work done in the Kanuti River drainage in 2014 and oral history indicate that the nominated ACEC, like many portions of Alaska, has been habitually used for thousands of years. Preliminary work indicates a moderate potential for encountering significant site densities in upland locales in the nominated ACEC. This area was not inventoried in summer 2015 due to intense fire activity.
Important	No	There are no known sites on BLM-managed lands in the nominated ACEC that are thought to be eligible for inclusion on the NRHP.

3.3.30 McQuesten Creek RNA

Background: The BLM designated McQuesten Creek RNA in 1986 through the ROD for the CYRMP (BLM 1986). All lands are State-selected, but low priority. Vegetation communities from alpine, subalpine, and riparian zones of all aspects are present.

Nominator: BLM

Rationale for nomination provided by nominator: Below is the rationale provided for the original RNA nomination, as stated in the *1983 Management Situation Analysis Central Yukon Planning Area*. The McQuesten Creek RNA was designated because of its unique and valuable features and characteristics. This RNA was reevaluated against ACEC criteria.

Elevations vary from just over 975 meters (3,200 feet) at the summit of the side valley watershed divide to approximately 380 meters (1,250 feet) on the McQuesten Creek bottomland as it leaves the area. There is a low-grade geothermal hot spring system in the bottom of the side valley, approximately 1.3 miles upstream of the confluence with McQuesten Creek. The geothermal system is marked by an elongated meadow in the creek valley in a highly scenic setting. Nearly the entire slope surface of the side valley is made up of stone stripes. At the upper elevations of the watershed divide, both barren and lichen-covered stone stripes can be seen. In the lower elevations, especially on the south-facing slope, the stripes are obscured under a forest canopy and understory growth. There are land surface slumps in ice-rich permafrost soils along the creek in the side valley, which have influenced the course of the creek.

The vegetation of the side valley includes black spruce-*cladonia* lichen woodland on lower elevation north-facing slopes. White spruce closed forest (rocky slope variant) dominates the

south-facing slope of the side valley. There are also some areas of black spruce closed forest (rocky slope variant) in valley-shaded lowlands. Narrow stands of balsam poplar-willow-Calamagrostis are characteristic of the bottomlands of the side valley creek and adjacent McQuesten Creek. There is a distinct alder-dominated tree line fringe (both open and closed variants) on the upper slopes of the valley.

The tepid hot spring pools in the side valley contain several, but not all, of the thermophillic algae and bacteria that occur at Ishtalitna Creek Hot Springs. A few noteworthy vascular plant species in the geothermally influenced zone are *Heracleum lanatum*, *Chrysosplenium tetrandum*, *Eleocharis uniglumis*, *Glyceria striata*, *Agrostis scabra*, and *Cardamine pratensis*. Another interesting feature of the geothermally influenced meadow zone is the abundance and activity of ground-dwelling ant colonies in drier portions.

The BLM conducted overflights of RNAs in 2014 to identify the hot springs in McQuesten Creek Valley. The goal was to make sure the valley is within the RNA boundary, as depicted on the master title plats. The BLM could not verify the location of the hot springs from the air, but from photos, it appears the spring is within the RNA boundary.

Recommendations: Research reasons for the current RNA boundary configuration. Consider revisions to the RNA boundary to follow the contour of the valley when alternatives are being developed. Research master title plats and aerial photos to confirm that RNA and associated hot springs withdrawal are depicted properly on the master title plats and in GIS data. If necessary, submit corrections to the master title plats and GIS data.

Area nominated: McQuesten Creek originates just to the west of Mt. Henry Eakin on the Ray Mountains crest and flows nearly due south to the Tozitna River. About halfway up McQuesten Creek is an unnamed side valley opening to the west. The watershed of the side valley and adjacent McQuesten Creek lowland make up the McQuesten Creek RNA, which is 3,900 acres. See **Figure 12**, Existing and Nominated ACECs/RNAs – Ray Mountains, and **Figure 13**, ACECs found to Meet the Relevance and Importance Criteria – Ray Mountains.

Values nominated: Soil, water, fish/riparian, vegetation, geology

McQuesten Creek RNA

Soil	Yes/No	Rationale
Relevant	Yes	The system of soil and hydrologic processes associated with the hot springs is rare to the planning area and is sensitive to change.
Important	Yes	Soil and water resources in the McQuesten Creek RNA are generally pristine and undisturbed. The soil and water characteristics that create the hot springs are rare to the planning area and are highly susceptible to erosion or other soil movement caused by disturbance of the ground cover.
RNA Characteristics	Yes	The soil and water characteristics in the McQuesten Creek RNA are unusual to the planning area.
RNA Size	No	The nature of hot springs is that they are small. However, if the Ishtalitna Creek Hot Springs RNA were incorporated into the McQuesten Creek RNA, it would be of adequate size for scientific study.

McQuesten Creek RNA

Water	Yes/No	Rationale
Relevant	Yes	See <i>Soil</i> above.
Important	Yes	See <i>Soil</i> above. Adhering to the mandates of the Clean Water Act is a national priority.
RNA Characteristics	Yes	See <i>Soil</i> above.
RNA Size	No	See <i>Soil</i> above.
Fish/Riparian	Yes/No	Rationale
Relevant	Yes	The ADFG's Freshwater Fish Inventory database ¹⁹ lists slimy sculpin, burbot, and Dolly Varden in the McQuesten Creek RNA. Anadromous fish species are not documented, although the ADFG (2014) does list McQuesten Creek as anadromous (with Chinook salmon rearing habitat) three miles downstream of the southern boundary of the RNA. The status of riparian resources has not been documented; however, due to lack of disturbance in the current ACEC, riparian resources are expected to be pristine and fully functional.
Important	No	The species of fish in this aquatic habitat and the riparian community that is integral to its function are typical of the area, with only locally significant qualities.
RNA Characteristics	Yes	This area contains a typical representation of a common plant and animal association.
RNA Size	No	The RNA does not encompass sufficient fish habitat to provide for study.
Vegetation	Yes/No	Rationale
Relevant	Yes	McQuesten Creek RNA meets the relevance criteria for vegetation because of the unique assemblages of plants associated with the hot springs, as noted in the RNA description.
Important	Yes	The McQuesten Creek RNA meets the importance criteria for vegetation because of the unique assemblages of plants associated with the hot springs, as noted in the RNA description.
RNA Characteristics	Yes	This RNA was identified and should be retained because the presence of the hot springs is associated with "an unusual plant or animal association."
RNA Size	Yes	Even though the area is relatively small, the area of interest (the hot springs) is in a small area that would be encompassed by the current RNA.
Geology	Yes/No	Rationale
Relevant	Yes	Hot springs are a unique geologic feature.
Important	No	The geologic features of this RNA are of minor interest because its features are also found in multiple locations statewide.
RNA Characteristics	Yes	Hot springs are a common geologic feature; stone stripes are a common geologic/ice feature.
RNA Size	Yes	More than adequate for geology.

¹⁹ <http://www.adfg.alaska.gov/index.cfm?adfg=ffinventory.main>

3.3.31 Ray Mountains (Tozitna Caribou ACECs Expansion)

Background: The BLM designated the Tozitna Subunit North and South ACECs in 1986 through the ROD for the CYRMP (BLM 1986). In 2014, through the scoping process for the CYRMP, the BLM proposed expanding the Tozitna Subunit North ACEC to include the Tozitna Subunit South ACEC, plus additional land, and renaming it the Ray Mountains ACEC.

All except eight square miles are State-selected. The BLM developed the Tozitna North and South ACEC Management Plan in 1988; PLO 5180 applies to most of this area. The existing ACEC is closed to mineral leasing and non-metalliferous mineral location but is open to metalliferous mineral location. PLO 5173 may apply to a small part of the nominated expansion and closes lands to all mining and mineral leasing.

Nominator: BLM

Rationale for nomination provided by nominator: The Tozitna Subunit North and South ACECs, and expansion was evaluated against the criteria for ACEC designation and the unique characteristics below.

The Ray Mountains Caribou Herd inhabits the Ray Mountains and southern Kanuti Flats, between the Yukon and Koyukuk Rivers. Two ACECs were designated in the BLM's CYRMP (1986) to protect crucial caribou habitat: the Tozitna North ACEC and Tozitna South ACEC. These areas were identified as having been traditionally used as calving areas by the Ray Mountains Caribou Herd, based on the location data that were available at the time the plan was written. However, subsequent data acquired through the BLM's and ADFG's regular radio tracking suggest that calving occurs in a much broader area. Expanding the ACEC boundaries to include additional BLM-managed land and both the Tozitna North and Tozitna South ACECs would simplify management of this crucial caribou habitat; also, it would more accurately reflect important calving grounds for the Ray Mountains Caribou Herd.

The BLM designated three ACECs in the Ray Mountains in the 1986 CYRMP: Tozitna River, Tozitna South, and Tozitna North. The similarity of these names creates confusion when referencing them; to clearly distinguish the area from the Tozitna River ACEC, the BLM recommends that the area designated to protect caribou habitat be renamed the Ray Mountains ACEC. It would include the current boundaries for the Tozitna North and Tozitna South ACECs.

Area nominated: As stated in the 1986 CYRMP, the current Tozitna Subunit North ACEC encompasses 129,000 acres. If combined with the Tozitna Subunit South ACEC (currently 62,600 acres) the combination of ACECs and the expansion would total 938,000 acres. See **Figure 12**, Existing and Nominated ACECs/RNAs – Ray Mountains, and **Figure 13**, ACECs found to Meet the Relevance and Importance Criteria – Ray Mountains.

Values nominated: Wildlife

Ray Mountains (Tozitna Caribou ACECs Expansion)

Wildlife	Yes/No	Rationale
Relevant	Yes	The Ray Mountains Caribou Herd inhabits the high country in the headwaters of the Tozitna River. Members of this herd are large-bodied interior Alaska caribou, and are representative of other small, non-migratory herds in the planning area.
Important	Yes	The Ray Mountains Caribou Herd is of local biological importance but its success as a herd will not affect broader caribou population dynamics in the state. However, small, relic caribou populations are of interest to biologists, as they are more susceptible to landscape level changes and local impacts and development. This feature of the Ray Mountains herd gives it significant qualities beyond the local level. It potentially has qualities that make it fragile, sensitive, and irreplaceable; the herd is not endangered or threatened, but it is potentially vulnerable to adverse change. It is not rare, but it is exemplary of small caribou herds in interior Alaska and unique because there are only a few non-migratory herds with ranges north of the Yukon River.

3.3.32 Spooky Valley RNA

Background: The BLM designated the Spooky Valley RNA in 1986 through the ROD for the CYRMP (BLM 1986). All lands are State-selected, but low priority. There is anecdotal evidence of Alaska Native spiritual values. See **Figure 12**, Existing and Nominated ACECs/RNAs – Ray Mountains, and **Figure 13**, ACECs found to Meet the Relevance and Importance Criteria – Ray Mountains.

Nominator: BLM

Rationale for nomination provided by nominator: As stated in the *Management Situation Analysis 1983*, the following illustrates the unique and valuable characteristic that this RNA was originally evaluated against.

The crest of the Ray Mountains, the north perimeter of the area, is rimmed with granite and granodiorite tors. The unusual geomorphology of the area, its broad expanse of subdued relief in a basin or bowl-like structure, may be related to the bedrock types and geologic history of the area. A Cretaceous granitic intrusion makes up the central part of the Ray Mountains. This unit is surrounded by a baked contact zone of Cretaceous hornfels, augen, or gneiss. If the gneiss were more erosion-resistant than the granite, then the constriction of Kobuk Creek to a narrow canyon in the gneiss zone is accounted for.

A constriction in the main stream draining the area has slowed the effective rate of sediment removal from the valley. As the valley has matured physiographically, sediment, boulders, and colluvium have collected and filled the valley because this material could not be moved through the canyon as fast as it was collecting.

On the upper ridges of Spooky Valley, where rock is being frost-shattered and transported downslope, stone stripes and rock polygons are well displayed. Tarlov (1980) observed a collapsing massive ground ice exposure in Spooky Valley in the summer of 1978. Exposures of

such features are, of course, ephemeral. However, in the hummocky area of frost boils in the valley, conditions are probably suitable for additional ice wedges and lenses to form, especially where there is abundant groundwater infiltration.

The vegetation of Spooky Valley is snowbed communities, talus slope vegetation complexes, hummock and frost boil types, stone stripe and prostrate scrub, and upland rock and fellfield barren types (Brock and Burke 1980). Snowbed communities are characterized by *Salix chamissonis*, *Cassiope tetragona*, *Pedicularis capitata*, and *Carex microchaeta*. Talus slopes are a complex mixture of dry lichen surfaces on boulders and more mesic habitats between rocks. *Salix phlebophylla*, *Ledum palustre*, and *Diapensia lapponica* are common between boulders. The tops and sides of hummocks and frost boils support *Betulanana*, *Vaccinium uliginosum*, and *V. vitis-idaea*, *Ledum palustre*, and *Lupinus arcticus*. Lower surfaces with wet ground are dominated by *Carex rotundata*, *Eriophorum angustifolium*, and *Juncus triglumis*. Stone stripes support most of the same vegetation types as talus slopes. Areas of favorable exposure and deeper soil within most of these vegetation complexes support herb-rich graminoid meadow communities, *Dryas octopetala* communities, or *C. tetragona*-*Anemone narcissiflora*-*P. capitata* snowbed meadows (Brock and Burke 1980).

Collectively, these vegetation types represent the low willow closed shrub, dwarf birch closed shrub, low willow open low shrub, dryas closed dwarf shrub, mat and cushion sedge tundra, and open dryas-lichen tundra type.

Farquhar and Schubert (1980) report a small endemic herd of caribou and 27 other known or expected mammal species in the Ray Mountains. Matthews (1980) sighted American golden plover in the lower elevation tundra around the Ray Mountains in a 1978 study, and this species should be present in the nominated RNA. Wheatears are abundant in favorable habitat in the Ray Mountains. They require boulders and bouldery crevices in the ground and tundra streams for foraging habitat. Because of its physiographic diversity, Spooky Valley supports the richest association of birds in the Ray Mountains. Evidently, it is one of the few or the only suitable areas in the Ray Mountains for the semi-palmated sandpiper, cliff swallow, golden eagle, and northern shrike (Matthews 1980).

Area nominated: Spooky Valley is formed by three parallel branches of Kobuk Creek (a tributary of Gishna Creek, which flows into the Tozitna River) and the generally east-west trending crest of the Ray Mountains. Elevations range from approximately 625 meters (2,050 feet) in the canyon where Kobuk Creek leaves the area to 1,400 meters (4,600 feet) in the northeast corner of the RNA. The Spooky Valley RNA is 10,100 acres.

Values nominated: Wildlife, special status species, vegetation, geology

Spooky Valley RNA

Wildlife	Yes/No	Rationale
Relevant	Yes	Caribou use the area habitually in the winter.
Important	Yes	Although the area within the RNA boundary is not vital to the caribou, they are found there in the winter. Increased access to the RNA would enable increased access to the herd.

Spooky Valley RNA

RNA Characteristics	Yes	This area contains habitat for semipalmated sandpiper, cliff swallow, golden eagle, and northern shrike as well as caribou habitat.
RNA Size	Yes	The area is likely of sufficient size to capture resources representative of an RNA. The boundary could be modified to accommodate natural valley watershed boundaries (contingent on land status).
Special Status Species	Yes/No	Rationale
Relevant	Yes	The nominated area meets the criteria for special status species. This is because there is at least one record of a BLM sensitive plant species in this area, <i>Ranunculus camissonis</i> Schltdl, as well as several BLM watch-listed species. Other sensitive species and their respective habitats are also likely to occur in the area.
Important	Yes	The special status species listed in the relevance statement warrants this important area for special status species.
RNA Characteristics	No	The RNA does not support any threatened or endangered species.
RNA Size	Yes	The area is likely of sufficient size to capture resources representative of an RNA. The boundary could be modified to accommodate natural valley watershed boundaries (contingent on land status).
Vegetation	Yes/No	Rationale
Relevant	Yes	The nominated area meets the importance criteria because of the unique mosaic of common and uncommon vegetation communities in this area.
Important	Yes	The RNA meets the importance criteria because of the unusually high concentration of unique community types in this relatively small area (e.g. snowbed communities, talus slope vegetation complexes, hummock and frost boil types, stone stripe and prostrate scrub, and upland rock and fellfield barren types presents a unique opportunity to study and understand the constituents of the vegetation mosaic in this area.
RNA Characteristics	Yes	This area exhibits an unusual plant or animal association and outstanding or unusual geologic, soil, or water features. It contains unique snowbed communities, talus slope vegetation complexes, hummock and frost boil types, stone stripe and prostrate scrub, and upland rock and fellfield barren types as described in the Rationale for Nomination.
RNA Size	Yes	The area is likely of sufficient size to capture resources representative of an RNA. The boundary could be modified to accommodate natural valley watershed boundaries (contingent on land status).
Geology	Yes/No	Rationale
Relevant	Yes	As is typical with geology, the uniqueness of the Spooky Valley is underlain by a rich mineral potential for rare earth elements and has been overlain by state mining claims.
Important	No	The features that are seen from the last flight show outcrops of rock throughout the valley. This is not a unique feature in Alaska or for that matter even the planning area.
RNA Characteristics	Yes	Stone stripes are a common geologic/ice feature.
RNA Size	Yes	The size is more than adequate for geological study.

3.3.33 Tozitna River ACEC

Background: The BLM designated the Tozitna River ACEC in 1986 through the ROD for the CYRMP (BLM 1986); large parts are State-selected. The BLM has developed an ACEC management plan. There is an application for instream flow reservation, and the State has given a filing date. A 300-foot withdrawal of the river recommended in the 1986 CYRMP ROD has not been implemented.

Nominator: BLM

Rationale for nomination provided by nominator: In 1986, the BLM designated the Tozitna River ACEC to protect salmon spawning habitat and identified acquiring baseline resource data as a management objective. To meet this management objective, and to accurately assess escapement of Chinook and summer chum salmon in the Middle Yukon River Sub-basin, the BLM initiated a salmon enumeration project on the Tozitna River. To this end, it operated a counting tower in 2001 and a resistance board weir from 2002 to 2009. An average run of 1,449 Chinook salmon passed through the weir during years of complete counting in commercial fishing seasons, with a low of 494 in 2007 and a high of 1,880 in 2002. An average run of 21,030 summer chum salmon passed through the weir during years of complete counting, with a low of 8,470 in 2008 and a high of 39,700 in 2005. A radio-tagging project indicated that the Tozitna River is an important area for Chinook salmon spawning, compared to other Middle Yukon River tributaries, the Melozitna and the Nowitna Rivers. The Tozitna River's overall contribution to Yukon River stock composition is estimated at around 1.1 percent (Eiler et. al 2004).

Area nominated: The current Tozitna River ACEC includes 843,000 acres²⁰. See **Figure 12**, Existing and Nominated ACECs/RNAs – Ray Mountains.

Values nominated: Soil, water, fish/riparian, wildlife

Tozitna River ACEC

<i>Soil</i>	<i>Yes/No</i>	<i>Rationale</i>
Relevant	Yes	The system of upwelling and downwelling areas associated with salmon spawning in the Tozitna River ACEC is rare in the planning area. It encompasses soil, water, riparian, and wetland resources. The system supports a unique incubation, rearing and overwintering habitat essential for maintaining chum, coho, and Chinook salmon diversity in the planning area and Alaska.
Important	Yes	While soil resources in the Tozitna River ACEC are generally pristine and undisturbed and would be considered unique on a national scale, they are not unique in the planning area or regionally. However, permafrost underlies much of the Tozitna River ACEC. These soils are highly susceptible to erosion or other soil movement caused by disturbance of the ground cover and subsequent thawing of permafrost. In addition, the unique and fragile soils around the upwelling and downwelling areas associated with chum, coho, and Chinook salmon spawning control the hydrology of

²⁰ The 1986 CYRMP identified approximately 786,724 acres as the ACEC. The acreage discrepancy is due to improved mapping and not a difference in the area intended to be designated as an ACEC.

Tozitna River ACEC

		the salmon spawning areas. Any disturbance of these soils would affect the spawning area's flow regime and would negatively affect salmon egg survival.
Water	Yes/No	Rationale
Relevant	Yes	See <i>Soil</i> above.
Important	Yes	While water quality in the nominated Tozitna River ACEC is excellent and would be considered unique on a national scale, it is not unique in the planning area or regionally. The upwelling and downwelling areas associated with chum, coho, and Chinook salmon spawning areas that provide water for incubation and rearing are unique in the planning area and Alaska. Maintaining water quality and temperature and adequate streamflows in these spawning areas is crucial in the incubation of salmon eggs and maintaining crucial overwintering habitat. Adhering to the mandates of the Clean Water Act is a national priority.
Fish/Riparian	Yes/No	Rationale
Relevant	Yes	The ADFG's Freshwater Fish Inventory database ²¹ lists arctic grayling, slimy sculpin, northern pike, longnose sucker, round whitefish, burbot, and Dolly Varden in the Tozitna River watershed. Within the ACEC, the ADFG also lists the Tozitna River drainage as anadromous, with Chinook salmon spawning and rearing, coho and chum salmon spawning, and sheefish (iconnu), whitefish, and sockeye salmon present (ADFG 2014). With the exception of several small private parcels in the drainage, riparian resources are in their natural state and are fully functional.
Important	Yes	<p>The Tozitna River is a highly productive aquatic environment that provides crucial spawning and rearing habitat to a variety of salmon and other fish species. Of the four species of salmon that inhabit the watershed, chum is the most numerous. The average annual chum salmon escapement is in excess of 20,000 fish. The Tozitna River also has a Chinook salmon escapement that averages greater than 1,400 fish per season (see data presented previously in the <i>Rationale for nomination provided by the nominator</i>). Salmon produced in this ACEC contribute to the availability and abundance of subsistence fish harvested in the middle and lower Yukon River. In addition, these fish play a small but important role in the overall genetic health of salmon in the Yukon Basin.</p> <p>Riparian resources' ecological functions are integral to the overall condition and quality of this important aquatic habitat. This is because they define sediment transport processes, biochemical and nutrient cycling, and food web maintenance. In addition, riparian resources, when viewed independently of other resources, constitute only 3 percent of the BLM-managed lands in the planning area, which could be considered somewhat rare on a regional basis. Riparian resources perform a disproportionate number of biological and physical functions on a unit area basis. Because of this, protection is warranted in order to satisfy national priorities related to water quality, land health, floodplain function, and biodiversity maintenance.</p>

²¹ <http://www.adfg.alaska.gov/index.cfm?adfg=ffinventory.main>

Tozitna River ACEC

Wildlife	Yes/No	Rationale
Relevant	Yes	The Ray Mountains Caribou Herd inhabits the upper headwaters of the Tozitna River and its tributaries and is occasionally documented in the valley. Their use of the valley bottom is intermittent and during times when they are en route to seasonal ranges. However, areas of most importance to wildlife are captured in the nominated Ray Mountains boundary. See the evaluation for this area.
Important	Yes	The non-migratory Ray Mountains Caribou Herd is a unique feature in the uplands between the Yukon River and Kanuti flats. However, not all of the lands within the Tozitna River ACEC boundary are important caribou habitat. See Ray Mountains evaluation.

3.3.34 Dulbi River ACEC

Background: The Dulbi River ACEC was designated as the Dulbi River Threatened and Endangered ACEC in 1986 through the ROD for the CYRMP (BLM 1986). In 2014, through the scoping process for the CYRMP, the Loudon Tribal Council nominated traditional hunting and fishing areas as an ACEC. Some of this nomination overlapped with the existing Dulbi River ACEC. Additionally, the BLM proposed expanding the Galena Mountain Caribou ACEC. This expansion encompasses part of the Dulbi River ACEC. These evaluations are covered under **Sections 3.3.36 and 3.3.35**. This section evaluates the Dulbi River ACEC based on its original purpose, peregrine falcon.

The USFWS removed the arctic peregrine falcon from the Endangered Species List in 1994 and removed the American peregrine falcon in 1999. Currently, the peregrine falcon is not a BLM Alaska sensitive species. Portions of this ACEC are State-selected.

Nominator: BLM

Rationale for nomination provided by nominators: The Dulbi River ACEC was originally designated because this area provides crucial habitat for the peregrine falcon. The original ACEC extent was reevaluated based on its relevance and importance as peregrine falcon habitat.

Area nominated: The current Dulbi River ACEC is 54,300 acres²² in size. See **Figure 14**, Existing and Nominated ACECs/RNAs – Dulbi Galena Wolf.

Values nominated: Wildlife, special status species

²² The 1986 CYRMP identified approximately 55,040 acres as the ACEC. The acreage discrepancy is due to improved mapping and not a difference in the area intended to be designated as an ACEC.

Dulbi River ACEC

Wildlife	Yes/No	Rationale
Relevant	Yes	The area that satisfies the relevance criteria is encompassed within the nominated Galena Mountain Caribou ACEC Expansion. See the evaluation for this area.
Important	Yes	The area that satisfies the relevance criteria is encompassed within the nominated Galena Mountain Caribou ACEC Expansion. See the evaluation for this area.
Special Status Species	Yes/No	Rationale
Relevant	No	The criterion that the ACEC was established under, peregrine falcons, is no longer considered relevant because the species is no longer listed and is not a current BLM Alaska sensitive species. One of the subunits of the original ACEC appears to provide habitat for an Alaska Natural Heritage Program-listed rare species, <i>Chenopodium glaucum</i> Linnaeus var. <i>salinum</i> (Standley) B. Boivin, but this species is not currently listed on the BLM Alaska's sensitive species list.
Important	No	See <i>Relevance</i> above.

3.3.35 Galena Mountain Caribou ACEC (Including Expansion)

Background: The BLM designated Galena Mountain Caribou ACEC in 1986 through the ROD for the CYRMP (BLM 1986). In 2014, through the scoping process for the RMP, the BLM proposed expanding the Galena Mountain Caribou ACEC.

In 1994, the USFWS delisted the arctic peregrine falcon and in 1999 delisted the American peregrine falcon. Currently, the peregrine falcon is not a BLM Alaska sensitive species. The west section of ACEC is State-selected lands. The Galena Mountain Caribou ACEC Management Plan was originally developed in 1986, and management objectives focus on sustaining the caribou herd and calving areas and improving caribou habitat.

Nominator: BLM

Rationale for nomination provided by nominator: The BLM reevaluated the Galena Mountain Caribou ACEC and nominated expansions against the criteria for ACEC designation and the unique characteristics below.

The Galena Mountain Caribou Herd inhabits the Koyukuk Flats and Kokrines Hills north of the Yukon River and the village of Galena. The BLM designated an ACEC composed of two subunits in its CYRMP (1986) to protect crucial caribou habitat. The current boundaries for these subunits reflect areas traditionally used as calving grounds for the Galena Mountain Caribou Herd. The herd size is approximately 125 animals and is in decline due to low recruitment²³ and calf survival. Therefore, the BLM recommends that the ACEC boundaries be expanded to include BLM-managed lands within the core range of the Galena Mountain Caribou Herd.

²³ The natural increase in population

Area nominated: The current Galena Mountain Caribou ACEC is 19,400 acres²⁴ in size. The Galena Mountain Caribou ACEC Expansion, including the additions proposed by the BLM, would total 671,000 acres. See **Figure 14**, Existing and Nominated ACECs/RNAs – Dulbi Galena Wolf, and **Figure 15**, ACECs found to Meet the Relevance and Importance Criteria – Dulbi Galena Wolf.

Values nominated: Wildlife

Galena Mountain Caribou ACEC (Including Expansion)

<i>Wildlife</i>	Yes/No	Rationale
Relevant	Yes	The nominated area meets the relevance criteria for caribou habitat for both the Galena and Wolf Mountain herds. Key habitat for caribou has been identified in this region, including calving grounds. The BLM continues to document key habitat for caribou in this region, where several ACECs have been designated and nominated to protect caribou habitat.
Important	Yes	The nominated area meets the importance criteria for caribou habitat for both the Galena and Wolf Mountain herds. Caribou are known to inhabit this area in significant numbers, and this area is known to encompass key or limited habitat features (e.g., calving grounds and winter range) sensitive to development. Protecting this habitat for use by caribou is key to sustaining a healthy population.

3.3.36 Traditional Hunting and Fishing Areas for Louden Tribe

Background: During scoping for the CYRMP, the BLM received an ACEC nomination from the Louden Tribal Council for areas that the tribe used for traditional hunting and fishing.

Nominator: Louden Tribal Council

Rationale for nomination provided by nominator: Traditional use of animals, fish, plants, and wood from accessible lands and waters has been practiced by the indigenous Koyukukon people of this region for thousands of years. The historical and cultural significance of this use should not be lost considering the brief history of the U.S. government and its present responsible management agency, the BLM. For us this lifeway is much more than utilitarian and practical, it is our history, culture, and identity as a sovereign people, which we wish to continue into the future.

The abundance, health, and accessibility of fish and wildlife species that we have traditionally depended upon are a necessity that must be protected. Its relevance to our lives and culture cannot be overstated.

²⁴ The 1986 CYRMP identified approximately 24,800 acres as the ACEC. The acreage discrepancy is due to improved mapping and not a difference in the area intended to be designated as an ACEC.

Due to our ancient and religious ties to the traditional foods accessible to us, all ecological processes that support the life of the land and waters is sacred and necessary, now and into the future. Anything that harms or degrades the supporting natural processes for maintaining our traditional harvest practices on the land and waters is harmful to us and cannot be allowed.

It is possible that if some of the mining potential on BLM-managed lands becomes active that it could threaten the health of the land and waters we depend upon. These activities should not take place in watersheds we are dependent on for traditional harvest. We cannot risk our way of life. Climate changes on the landscape are revealing their affects and these must be taken into consideration as potential hazards that may affect the traditional harvest species we use. As climate change is a global occurrence we cannot stop it, but we must work with land managers to try and understand the changes and potential threats and plan for them as best we can with an eye to preparing for and adapting while maintaining our traditional way of life.

Our concerns about mining and climate change go beyond our local needs and extend in all directions. This is because we see the natural world is an interconnected whole, not separate parts. It is all connected: air-water-land-animals-fish-plants-people. We have responsibilities for how we use the land, one of which is to do so respectfully so as not to affect things negatively, downstream or for the future. The importance of the health of the land and waters for supporting healthy moose, fish, and so forth, cannot be overstated.

Our traditional way of life is all of the above descriptions, or at least potentially so in the face of mineral development and the unknown effects of climate change. Our village is remote, with few employment opportunities, making our traditional use of land and waters crucially important for survival and continuing our culture.

The lands and waters we depend on for traditional harvest are necessary for practicing what the federal government refers to as our “subsistence priority.” We call it life. The welfare and safety of our tribe is dependent upon the health of the lands and waters and we wish to insure that management decisions protect our lifeways, now and into the future.

Special protection is required for maintaining all natural processes that support our traditional harvest lifeway. Management for protecting ecosystem integrity, functionality, and quality are vitally important to supporting and insuring our culture, community health, and way of life.

We believe that mining within the watersheds, which we have used for centuries for traditional harvest, and its associated roads, development, waste storage facilities, and other factors pose grave threats to our traditional harvest lifeway. We are not sure what BLM can do, management wise, in the face of climate change affects that may pose natural hazards and/or safety concerns, but we certainly see the potential for changes and disruptions to weather patterns and climatic change that may require careful planning and action for protecting traditional harvest practices and our community. Some of the potential changes, some already underway are, warming trends with dryer weather and increased wildfire, permafrost thaw and groundwater flow changes, increased flood events, lakes, stream and river warming, shifting breeding and migration patterns of moose, caribou and other harvest species, water quality changes that affect fish migration and spawning habitat.

Area nominated: Traditional harvest lands and waters used by the Koyukuk Tribe extending up the Yukon River to Galena, extending down the Yukon River to Nulato, up the Koyukuk River to Huslia, with areas east and west of the Koyukuk River. This nomination includes 43,100 acres. See **Figure 14**, Existing and Nominated ACECs/RNAs – Dulbi Galena Wolf, and **Figure 16**, Existing and Nominated ACECs/RNAs – Lower Yukon.

Values nominated: Fish/riparian, , wildlife, cultural

Traditional Hunting and Fishing Areas for Louden Tribe

<i>Fish/Riparian</i>	Yes/No	Rationale
Relevant	No	Data is lacking to support the presence of fish species. The ADFG does not list any fish inventory reports in the Alaska Freshwater Fish Inventory database ²⁵ for waters in the nominated ACEC. No anadromous species are listed for waters of the nominated ACEC in the State of Alaska's Anadromous Waters Catalog (ADFG 2014). The status of riparian resources is unknown; however, due to the area's remote location, riparian resources are expected to be pristine and fully functional.
Important	No	See <i>Relevance</i> above.
<i>Wildlife</i>	Yes/No	Rationale
Relevant	No	Based on the best available information the area does not meet the relevance criteria for wildlife resources or habitat. Although habitat for animal species likely exists within the proposed ACEC area, there are currently no records that suggest this area is relevant to those resources on a landscape scale.
Important	No	Based on the best available information, the area does not meet the importance criteria for wildlife resources or habitat.
<i>Cultural</i>	Yes/No	Rationale
Relevant	No	While it may play an important role in local subsistence, there are no known cultural resources in this area. The presence of sacred sites or potential Traditional Cultural Properties must be considered; however, it is unlikely that an entire drainage would be considered a Traditional Cultural Property or sacred site. This is because these are typically discrete landforms or specific locations relating to traditional religious practices or significant events in the traditional belief system, such as places of cultural origin. Cultural significance should not be confused with subsistence importance because subsistence use is accounted for under a unique set of laws and regulations.
Important	No	There are no identified cultural resources in this area that meet the criteria for inclusion on the NRHP.

²⁵ <http://www.adfg.alaska.gov/index.cfm?adfg=ffinventory.main>

3.3.37 Yukon River Watersheds

Background: During scoping for the CYRMP, the BLM received an ACEC nomination from the Koyukuk Tribal Council for the watersheds of the Yukon River.

Nominator: Koyukuk Tribal Council

Rationale for nomination provided by nominators: Traditional use of animals, fish, plants, and wood from accessible lands and waters has been practiced by the indigenous Koyukukon people for thousands of years. The historical and cultural significance of this use should not be lost considering the brief history of the U.S. government and the BLM. For us this lifeway is much more than utilitarian and practical, it is our history, culture, and identity as a sovereign people, which we wish to continue into the future. The abundance, health, and accessibility of fish and wildlife species that we have traditionally depended upon are a necessity that must be protected. Its relevance to our lives and culture cannot be overstated. Due to our ancient and religious ties to the traditional foods accessible to us, all ecological processes that support the life of the land and waters is sacred and necessary, now and into the future. Anything that harms or degrades the supporting natural processes for maintaining our traditional harvest practices on the land and waters is harmful to us and cannot be allowed.

Our concerns about mining and climate change go beyond our local needs and extend in all directions. This is because we see the natural world is an interconnected whole. It is all connected: air-water-land-animals-fish-plants-people. We have responsibilities for how we use the land, one of which is to do so respectfully so as not to affect things negatively, downstream or for the future. The importance of the health of the land and waters for supporting healthy moose, fish, and so forth, cannot be overstated. Our traditional way of life is of more than local significance and special worth, or at least potentially so in the face of mineral development and the unknown effects of climate change. Our village is remote, with few employment opportunities, making our traditional use of land and waters crucially important for survival and continuing our culture. The lands and waters we depend on for traditional harvest are necessary for practicing what the federal government refers to as our “subsistence priority.” We call it life. The welfare and safety of our tribe is dependent upon the health of the lands and waters and we wish to insure that management decisions protect our lifeways, now and into the future.

This area holds significant historical and cultural value to the Koyukukon people. The fish and wildlife species found in this area are important for subsistence use. The ecological process of this region support subsistence and tribal traditions. Natural hazards due to climate change and BLM mining pose potential threats to this area.

Area nominated: The nominated Yukon River Watersheds ACEC is 104,000 acres. This nomination includes many small, scattered plots of land along the Yukon River and its tributaries, from south of Kaltag to about 70 miles east of Galena. See **Figure 14**, Existing and Nominated ACECs/RNAs – Dulbi Galena Wolf, and **Figure 16**, Existing and Nominated ACECs/RNAs – Lower Yukon.

Values nominated: Soil, water, fish/riparian, wildlife, cultural

Yukon River Watersheds

Soil	Yes/No	Rationale
Relevant	No	While soil resources in the Yukon River Watersheds nomination are generally pristine and undisturbed and would be considered unique on a national scale, they are not unique in the planning area or region. Similar sites and values can be found in other sites in the planning area and Alaska.
Important	No	See <i>Relevance</i> above.
Water	Yes/No	Rationale
Relevant	No	While water quality in the nominated Yukon River Watersheds nomination is excellent and would be considered unique on a national scale, it is not unique in the planning area or region. Similar sites and values can be found in other sites in the planning area and Alaska.
Important	No	See <i>Relevance</i> above.
Fish/Riparian	Yes/No	Rationale
Relevant	Yes	The ADFG lists the reach of the Khotol River that runs through the nominated ACEC as anadromous, with chum salmon, sheefish (iconnu), and whitefish present. A tributary to the South Fork Nulato River in the nominated ACEC, at Township 9 South, Range 2 East, Kateel River Meridian, is also anadromous. This stream provides Chinook salmon with rearing habitat (ADFG 2014). The status of riparian resources is unknown; however, due to the area's remote location, riparian resources are expected to be pristine and fully functional.
Important	No	Species of fish present and the riparian community that is integral to the function of this aquatic habitat are typical of the area, with only locally significant qualities.
Wildlife	Yes/No	Rationale
Relevant	No	Based on the best available information the area does not meet the relevance criteria for sensitive plant or animal species, vegetation or other wildlife resources or habitat. Although habitat for sensitive species and other plant and animal species likely exists within the proposed ACEC area, there are currently no records that suggest that this area is relevant to those resources on a landscape scale.
Important	No	Based on the best available information the area does not meet the importance criteria for sensitive plant or animal species, vegetation or other wildlife resources or habitat.
Cultural	Yes/No	Rationale
Relevant	No	While this location may play an important role in local subsistence, there are no known cultural resources there. The presence of sacred sites or potential Traditional Cultural Properties must be considered, but it is unlikely that an entire drainage would be considered a Traditional Cultural Property or sacred site; these are typically discrete landforms or specific locations relating to traditional religious practices or significant events in the traditional belief system, such as places of cultural origin. Cultural significance should not be confused with subsistence importance because subsistence use is accounted for under a unique set of laws and regulations.
Important	No	There are no identified cultural resources in this area that meet the criteria for inclusion on the NRHP.

3.3.38 Bishop Creek

Background: During scoping for the CYRMP, the BLM received an ACEC nomination from the Koyukuk Tribal Council and the Louden Tribal Council for Bishop Creek.

Nominators: Koyukuk Tribal Council and Louden Tribal Council

Rational for nomination provided by the nominators: Traditional use of animals, fish, plants, and wood from accessible lands and waters has been practiced by the indigenous Koyukukon people for thousands of years. The historical and cultural significance of this use should not be lost considering the brief history of the U.S. government and the BLM. For us this lifeway is much more than utilitarian and practical, it is our history, culture, and identity as a sovereign people, which we wish to continue into the future. The abundance, health, and accessibility of fish and wildlife species that we have traditionally depended upon are a necessity that must be protected. Its relevance to our lives and culture cannot be overstated. Due to our ancient and religious ties to the traditional foods accessible to us, all ecological processes that support the life of the land and waters is sacred and necessary, now and into the future. Anything that harms or degrades the supporting natural processes for maintaining our traditional harvest practices on the land and waters is harmful to us and cannot be allowed.

Our concerns about mining and climate change go beyond our local needs and extend in all directions. This is because we see the natural world is an interconnected whole. It is all connected: air-water-land-animals-fish-plants-people. We have responsibilities for how we use the land, one of which is to do so respectfully so as not to affect things negatively, downstream or for the future. The importance of the health of the land and waters for supporting healthy moose, fish, and so forth, cannot be overstated. Our traditional way of life is of more than local significance and special worth, or at least potentially so in the face of mineral development and the unknown effects of climate change. Our village is remote, with few employment opportunities, making our traditional use of land and waters crucially important for survival and continuing our culture. The lands and waters we depend on for traditional harvest are necessary for practicing what the federal government refers to as our “subsistence priority.” We call it life. The welfare and safety of our tribe is dependent upon the health of the lands and waters and we wish to insure that management decisions protect our lifeways, now and into the future.

Area nominated: The nominated Bishop Creek ACEC is 16,200 acres. See **Figure 16**, Existing and Nominated ACECs/RNAs – Lower Yukon.

Values nominated: Fish/riparian, cultural

Bishop Creek

<i>Fish/Riparian</i>	Yes/No	Rationale
Relevant	No	Data is lacking to support the presence of fish species. The ADFG does not list any fish inventory reports in the Alaska Freshwater Fish Inventory database ²⁶ for waters in the nominated ACEC. No anadromous species are listed for waters of the nominated ACEC in the State of Alaska’s

²⁶ <http://www.adfg.alaska.gov/index.cfm?adfg=ffinventory.main>

Bishop Creek

		Anadromous Waters Catalog (ADFG 2014). The status of riparian resources is unknown; however, due to the area's remote location, riparian resources are expected to be pristine and fully functional.
Important	No	See <i>Relevance</i> above.
Cultural	Yes/No	Rationale
Relevant	No	While this location may play an important role in local subsistence, there are no known cultural resources in it. The presence of sacred sites or potential Traditional Cultural Properties must be considered. It is not likely that an entire drainage would be considered a Traditional Cultural Property or sacred site; these are typically discrete landforms or specific locations relating to traditional religious practices or significant events in the traditional belief system, such as places of cultural origin. Cultural significance should not be confused with subsistence importance; subsistence use is accounted for under a unique set of laws and regulations.
Important	No	There are no identified cultural resources in this area that meet the criteria for inclusion on the NRHP.

3.3.39 Nulato Hills ACEC

Background: The Nulato Hills ACEC was designated as the Threatened and Endangered ACEC in 1986 through the ROD for the CYRMP (BLM 1986).

The arctic peregrine falcon was delisted in 1994; the American peregrine falcon was delisted in 1999 and is not currently a BLM Alaska sensitive species. This ACEC encompasses mostly unencumbered BLM-managed lands. It has the same name as the Nulato Hills ACEC for caribou in the Kobuk-Seward Peninsula Planning Area, but they not related.

Nominator: BLM

Rationale for nomination provided by nominator: The original Nulato Hills ACEC described this area as crucial peregrine falcon habitat. The ACEC was reevaluated for the same criteria.

Area nominated: The current Nulato Hills ACEC is 40,700 acres. See **Figure 16**, Existing and Nominated ACECs/RNAs – Lower Yukon.

Values nominated: Special status species

Nulato Hills ACEC

Special Status Species	Yes/No	Rationale
Relevant	No	The criterion that the ACEC was established under, peregrine falcons, is no longer considered relevant. This is because the species is no longer listed under the Endangered Species Act and is not a BLM Alaska sensitive species.
Important	No	See <i>Relevance</i> above.

3.3.40 Arms Lake RNA

Background: The BLM designated the Arms Lake RNA in 1986 through the ROD for the CYRMP (BLM 1986). Land status is unencumbered BLM managed.

Nominator: BLM

Rationale for nomination provided by nominator: The Arms Lake RNA was designated in 1986 and was reevaluated against the criteria for ACEC and RNA designation and rationale below.

The sand dunes in this area were made from a sediment trap that occurred nearly 12,000 years ago, after the Pleistocene Ice Age. Wind and water transported and sorted sediment, creating the dunes and influencing the making of the tributary streams in this area. The north-facing slope is generally permafrost free and supports an impressive and extensive tract of mixed spruce-birch forest. The south facing slope is underlain by permafrost and supports black spruce and lichen woodland. This area is made up of several lakes, upland pond environments, and dry lakebed remnants.

Near four major transverse dunes in the southwest corner are two excellent examples of parabola dunes. The principle vegetation of this area is black spruce-*cladonia* woodland on the permafrost dunes. A thin cap or mantle of up to 20 centimeters (approximately 8 inches) of silt or silt loam covers the sand, improving the conditions favorable for permafrost to form.

A pond approximately 400 meters (approximately 1,300 feet) south of Arms Lake is expanding due to thermokarst collapse. Tilted and collapsing trees ring this pond. This feature is of interest because of questions about the role of permafrost in controlling the origin, persistence, and draining of the lakes and ponds of the dune summit here. This area is proposed as a suitable habitat for American golden plover during its migration. Some habitat features in this area are favorable for the dunlin, and there is a remote chance that the western sandpiper may frequent the area.

Area nominated: The Arms Lake RNA is 10,600 acres and occupies the crest and gradually south-sloping exposure of a small watershed on the Chitanana Dunes System. See **Figure 17**, Existing and Nominated ACECs/RNAs – Nowitna, and **Figure 18**, ACECs found to Meet the Relevance and Importance Criteria – Nowitna.

Values nominated: Soil, vegetation, geology

Arms Lake RNA

<i>Soil</i>	Yes/No	Rationale
Relevant	Yes	The Arms Lake RNA contains a mosaic of soil types, including the rare and unique sand dune complex, which supports a variety of vegetation and animal communities.
Important	Yes	While soil resources in the nominated Arms Lake RNA are generally pristine and undisturbed and would be considered unique on a national scale, they are not unique in the planning area or region. However, the mosaic of soil types, including the sand dune complex, is unique in the

Arms Lake RNA

		planning area and Alaska. In addition, permafrost underlies much of the Arms Lake RNA. Permafrost and sand dunes are highly susceptible to erosion or other soil movement caused by disturbance of the ground cover and subsequent thawing of permafrost.
RNA Characteristics	Yes	The Arms Lake RNA has a mosaic of soil types, including the sand dune complex, which is unique in the planning area and Alaska.
RNA Size	Yes	This RNA, in combination with the Redlands Lake RNA, should be of adequate size to provide for scientific study.
Vegetation	Yes/No	Rationale
Relevant	Yes	The rare geologic characteristics of parabola dunes, in combination with exemplary permafrost-driven lakebed changes, are likely associated with unique assemblages and distributions of plant and animal species, as well as vegetation succession trajectory changes.
Important	Yes	The above-mentioned relevance criteria provide a unique opportunity for further study of both unique and exemplary systems and species assemblages that have not been well explained.
RNA Characteristics	Yes	Sand dunes are a unique geologic feature in interior Alaska. The Arms Lake RNA dunes are covered by tundra vegetation, which consists of typical species assemblages. Although the presence of sand dunes is somewhat unusual, there are other sand dunes in interior Alaska that are more visible and accessible than those in this RNA.
RNA Size	Yes	An argument could be made that a case study of one such area would not be meaningful on a landscape level and that additional areas with similar characteristics would be good additions.
Geology	Yes/No	Rationale
Relevant	No	The sand dunes are of geologic interest, but recent photos taken of the RNA show that the sand dunes have ceased functioning as dunes and are now part of the tundra.
Important	No	The sand dunes do not meet the importance criteria because they cannot be viewed or studied.
RNA Characteristics	Yes	The sand dunes would be a common geologic feature, if visible, but the tundra covering them is a more common feature of the state. The sand dunes are an unusual geologic feature for the area, but there are other sand dunes throughout the state that are more visible and accessible.
RNA Size	Yes	The RNA boundary is more than adequate for the study of the tundra-covered sand dunes in this area.

3.3.41 Redlands Lake RNA

Background: The BLM designated the Redlands Lake RNA in 1986 through the ROD for the CYRMP (BLM 1986). The land status is unencumbered managed BLM.

Nominator: BLM

Rationale for nomination provided by nominator: The Redlands Lake RNA was reevaluated against the criteria for ACEC and RNA designation and the unique characteristics below.

This designated RNA has many unique characteristics that qualify it as such. Several factors are combined to produce relatively warm water in the lakes of the basin north of the Alaska Range. This is a low elevation basin, with an extensive area below 1,000 feet. It is in the central part of the state, where the warmest summers occur. The dune surfaces are not completely covered with vegetation, or at least they are not shaded with forest canopy. As a result, waters feeding the lakes are warmed directly by the sun or indirectly by the sun-warmed ground. The lakes themselves are relatively shallow, thus easily warmed. Some have variable shorelines, constricting in dry periods and expanding back over relatively warm soil surfaces after rains.

Because of these factors, the dune lake region of central Alaska is limnologically unique. These lakes provide attractive recreational and settlement features. Nearly all of the lakes larger than 300 acres have experienced settlement. Redlands Lake may be the last large lake on or associated with the dune fields south of the Tanana and Yukon Rivers that has not experienced shoreline development.

Area nominated: The Redlands Lake RNA is 3,800 acres and is located at the north end of the BLM North Kuskokwim ownership block. It is 30 to 40 miles southwest of the confluence of the Tanana and Yukon Rivers. See **Figure 17**, Existing and Nominated ACECs/RNAs – Nowitna, and **Figure 18**, ACECs found to Meet the Relevance and Importance Criteria – Nowitna.

Values nominated: Soil, fish/riparian, vegetation, geology, cultural

Redlands Lake RNA

<i>Soil</i>	Yes/No	Rationale
Relevant	Yes	The Redlands Lake RNA contains a mosaic of soil types, including the rare and unique sand dune complex, which supports a variety of vegetation and animal communities.
Important	Yes	While soil resources in the nominated Redlands Lake RNA are generally pristine and undisturbed and would be considered unique on a national scale, they are not unique in the planning area or region. However, the mosaic of soil types, including the sand dune complex, is unique in the planning area and Alaska. In addition, permafrost underlies much of the Arms Lake RNA. Permafrost and sand dunes are highly susceptible to erosion or other soil movement caused by disturbance of the ground cover and subsequent thawing of permafrost.
RNA Characteristics	Yes	The Redlands Lake RNA has a mosaic of soil types, including the sand dune complex, which is unique in the planning area and Alaska.
RNA Size	Yes	This RNA, in combination with the Arms Lake RNA, should be of adequate size to provide for scientific study.
<i>Fish/Riparian</i>	Yes/No	Rationale
Relevant	Yes	Based on Juday (1983), Redlands Lake is inhabited by northern pike and least cisco. Although the status of riparian resources is unknown, due to the area's remote location and previous management as an RNA, riparian resources are expected to be pristine and fully functional.
Important	No	Species of fish present and the riparian community that is integral to the function of this aquatic habitat are typical of the area, with only locally significant qualities.

Redlands Lake RNA

RNA Characteristics	Yes	Fish species are typical for the area. Changes in species composition or assemblages may be of interest as part of climate change monitoring and concurrent geomorphology changes.
RNA Size	Yes	It is large enough for the study of fish species.
Vegetation	Yes/No	Rationale
Relevant	Yes	The rare geologic characteristics of dunes and associated rare lakes meets the relevance criteria, in combination with unique assemblages and distributions of plant and animal species and vegetation succession trajectory changes.
Important	Yes	The above-mentioned relevance criteria provide a unique opportunity for further study of both unique and exemplary systems and species assemblages that have not been well explained.
RNA Characteristics	Yes	<ol style="list-style-type: none"> 1. A typical representation of a common plant or animal association: Yes. 2. An unusual plant or animal association: Yes, unique unforested dune vegetation (Juday 1983). 3. A threatened or endangered plant or animal species: None known. 4. A typical representation of common geologic, soil, or water features: Yes (relic sand dunes). 5. Outstanding or unusual geologic, soil, or water features: Yes, relic dunes and shallow warm lakes, which are limnologically unique for interior Alaska, as described in <i>Rationale for nomination provided by nominator</i> (Juday 1983).
RNA Size	Yes	The RNA is large enough for the study of vegetation.
Geology	Yes/No	Rationale
Relevant	No	The sand dunes are of geologic interest, but recent photos taken of the RNA show that the sand dunes have ceased functioning as dunes and are now part of the tundra.
Important	No	The sand dunes do not meet the importance criteria because they cannot be viewed or studied.
RNA Characteristics	Yes	The sand dunes are a common geologic feature, if visible, but the tundra covering them is a more common feature of the state. The sand dunes are an unusual geologic feature for the area, but there are other sand dunes throughout the state that are more visible and accessible.
RNA Size	Yes	The RNA boundary is more than adequate for studying the tundra-covered sand dunes in this area.
Cultural	Yes/No	Rationale
Relevant	No	No pedestrian survey was undertaken. While prehistoric use is likely, given the size and location of the lake, there are no data that suggest special management.
Important	No	BLM archaeologists who flew over this area in 2014 did not identify typical areas of high probability, but sites may exist.

3.3.42 Sethkokna River

Background: During the scoping process for the CYRMP, ACEC nominations for the Sethkokna River were received from the BLM and USFWS. Land status of the expansion is a mixture of unencumbered BLM-managed and State-selected land (low priority 10).

Nominators: BLM and USFWS (Koyukuk/Nowitna NWR)

Rationale for nomination provided by the nominators: In the early 2000s, two major multi-year projects were conducted in the Yukon River Basin. The BLM conducted one of these projects, the Salmon Production Habitat Survey, in cooperation with the ADFG. It involved systematic trapping (using minnow traps) and aerial surveys of all BLM-managed streams or segments of streams not previously documented in the State’s anadromous waters catalog.

The other project was the Yukon River salmon radio telemetry project, which was a multi-agency effort begun in 2000 by the ADFG and the National Marine Fisheries Service (Spencer and Eiler 2004, Eiler et al. 2006). Both projects documented Chinook salmon spawning in the Sethkokna River and that the Sethkokna River is the primary producer of Chinook salmon in the Nowitna River drainage (R. Brown, USFWS, pers. comm., and BLM unpublished data).

In 2014, BLM conducted an aerial survey of the Sethkokna River in order to document the number and location of adult Chinook spawning in the system. Ninety-eight Chinook and 40 Chinook redds were observed during the survey. These results, although not representative of the true number of salmon that spawn within the drainage, do indicate that the Sethkokna River is a primary producer of Chinook salmon within the Nowitna River drainage. The watershed area in the planning area is 304,000 acres, 98 percent of which is managed by the BLM.

Area nominated: The total nominated area is 319,000 acres. The USFWS nomination overlaps the BLM nomination but also includes portions of the Titna watershed. The Telsitna-Titna nominations are evaluated separately. See **Figure 17**, Existing and Nominated ACECs/RNAs – Nowitna, and **Figure 18**, ACECs found to Meet the Relevance and Importance Criteria – Nowitna.

Values nominated: Soil, water, fish/riparian

Sethkokna River

<i>Soil</i>	<i>Yes/No</i>	<i>Rationale</i>
Relevant	Yes	The system of upwelling and downwelling areas associated with salmon spawning in the Sethkokna River nomination is rare in the planning area. It encompasses soil, water, riparian, and wetland resources. The system supports a unique incubation, rearing, and overwintering habitat essential for maintaining Chinook salmon diversity in the planning area and Alaska.
Important	Yes	While soil resources in the Sethkokna River nomination are generally in a pristine and undisturbed condition and would be considered unique on a national scale, they are not unique in the planning area or regionally. However, permafrost underlies much of the Sethkokna River nomination. These soils are highly susceptible to erosion or other soil movement caused by disturbance of the ground cover and subsequent thawing of permafrost. In addition, the unique and fragile soils around the upwelling and downwelling areas associated with Chinook salmon spawning control the hydrology of the salmon spawning areas. Any disturbance of these soils would affect the spawning area’s flow regime and would negatively affect salmon egg survival.

Sethkokna River

Water	Yes/No	Rationale
Relevant	Yes	See <i>Soil</i> above.
Important	Yes	While water quality in the nominated Sethkokna River nomination is excellent and would be considered unique on a national scale, it is not unique in the planning area or regionally. The upwelling and downwelling areas associated with Chinook salmon spawning areas that provide water for incubation and rearing of salmon are unique in the planning area and Alaska. Maintaining water quality and temperature and adequate streamflows in these spawning areas is crucial in the incubation of salmon eggs and maintaining crucial overwintering habitat. Adhering to the mandates of the Clean Water Act is a national priority.
Fish/Riparian	Yes/No	Rationale
Relevant	Yes	The Sethkokna River provides crucial spawning and rearing habitat to Chinook salmon. Other species that have been documented in the drainage include slimy sculpin, arctic grayling, and burbot (BLM unpublished data). Riparian resources in the area are in proper functioning condition.
Important	Yes	<p>Only for those waters draining into the Sethkokna River. With the exception of the Sethkokna River drainage, water draining directly into the Titna River is excluded from consideration. The Sethkokna River is known to provide crucial spawning and rearing habitat to Chinook salmon. In addition to what was previously documented, the BLM conducted an aerial salmon escapement survey in July 2014 and counted 98 Chinook salmon spawning over an extensive reach of the Sethkokna River. Although not representative of the true number of salmon that spawn in the drainage, these results do indicate that the Sethkokna River is a primary producer of Chinook salmon in the Nowitna River drainage.</p> <p>Riparian resources' ecological functions are integral to the overall condition and quality of this important aquatic habitat. This is because they define sediment transport processes, biochemical and nutrient cycling, and food web maintenance. In addition, riparian resources, when viewed independently of other resources, constitute only 3 percent of the BLM-managed lands in the planning area, which could be considered somewhat rare on a regional basis. Riparian resources perform a disproportionate number of biological and physical functions on a unit area basis. Because of this, protection is warranted in order to satisfy national priorities related to water quality, land health, floodplain function, and biodiversity maintenance.</p>

3.3.43 Sulukna River ACEC (Including Expansion)

Background: The BLM designated the Sulukna River ACEC in 1986 through the CYRMP (BLM 1986). In 2014, through the scoping process for the CYRMP, the BLM and USFWS proposed expanding the Sulukna River ACEC to include 380,000 additional acres. The land status of this expansion is a mixture of unencumbered BLM, State selected, and Native-selected. Most of the State-selected land is low priority, but the upper headwaters are high.

Nominators: BLM and USFWS (Koyukuk/Nowitna NWR)

Rationale for nomination provided by nominators: The CYRMP designated the ACEC to protect the spawning habitat of the unique sheefish (inconnu), thought to be present in the lower river (Alt 1974, 1985). In a 2003 cooperative study, the BLM and USFWS documented the timing and distribution of inconnu spawners in the Sulukna River. Most of the fish were using an area between Mile 16 and Mile 50 to spawn, an area upstream of the uppermost ACEC boundary (Kretsinger and Brown 2004). The USFWS, BLM, and ADFG conducted a continuation of the 2003 telemetry project from 2005 to 2009. Results from this study further refined the spawning area to between Mile 16 and Mile 57 and documented that inconnu spawning in the Nowitna River drainage is limited to the Sulukna River (R. Brown, USFWS, unpublished data).

The Sulukna River is one of five known spawning habitats for inconnu in the Yukon River basin. In 2008 and 2009, the abundance of the spawning population was estimated to be 2,079 and 3,531 (Esse 2011). In addition to inconnu, the Sulukna River provides habitat to hundreds of coho salmon (D. Esse, BLM pers. comm.); fall chum salmon, humpback whitefish, and least cisco are known to use the river (Kretsinger and Brown 2004).

The USFWS and BLM jointly manage the Sulukna River watershed. The USFWS manages the lower one percent (4,500 acres) of the watershed, and the BLM manages the remainder (399,000 acres). Approximately 2.5 percent of the watershed is currently designated as an ACEC and is managed by the BLM. Based on the presence of this rare habitat (there are only five known inconnu spawning areas in the Yukon River Basin), the entire Sulukna River watershed upstream of the Nowitna River NWR should be included in the existing ACEC.

Area nominated: The current Sulukna River ACEC is 24,600 acres²⁷ and an additional 380,000 acres has been nominated. The total size of the existing ACEC and the nominated expansion is 405,000 acres. See **Figure 17**, Existing and Nominated ACECs/RNAs – Nowitna, and **Figure 18**, ACECs found to Meet the Relevance and Importance Criteria – Nowitna.

Values nominated: Soil, water, fish/riparian, wildlife

Sulukna River ACEC (Including Expansion)

Soil	Yes/No	Rationale
Relevant	Yes	The system of upwelling and downwelling areas associated with salmon and inconnu spawning, in the Sulukna River ACEC, encompassing soil, water, riparian, and wetland resources are rare to the planning area. It supports a unique incubation, rearing, and overwintering habitat essential for maintaining inconnu and Chinook, coho, and chum salmon diversity in the planning area and Alaska as a whole. Only parts of the Sulukna River watershed have these characteristics; those areas nominated by USFWS that flow directly into the Nowitna River do not have this habitat.
Important	Yes	While soil resources in the Sulukna River ACEC are generally pristine and undisturbed and would be considered unique on a national scale, they are not unique in the planning area or region. However, permafrost underlies much of the Sulukna River ACEC. These soils are highly susceptible to

²⁷ The 1986 CYRMP identified approximately 10,240 acres as the ACEC. The acreage discrepancy is due to improved mapping and not a difference in the area intended to be designated as an ACEC.

Sulukna River ACEC (Including Expansion)

		erosion or other soil movement caused by disturbance of the ground cover and subsequent thawing of permafrost. In addition, the unique and fragile soils around the upwelling and downwelling areas associated with salmon and inconnu spawning control the hydrology of the salmon and inconnu spawning areas. Any disturbance of these soils would affect the spawning area's flow regime and would negatively affect salmon egg survival.
Water	Yes/No	Rationale
Relevant	Yes	See <i>Soil</i> above.
Important	Yes	While water quality in the nominated Sulukna River ACEC is excellent and would be considered unique on a national scale, it is not unique in the planning area or region. The upwelling and downwelling areas associated with salmon and inconnu spawning that provide water for incubation and rearing of salmon are unique in the planning area and Alaska. Maintaining water quality and temperature and adequate streamflows in these spawning areas is crucial in the incubation of salmon and inconnu eggs and for maintaining crucial overwintering habitat. Adhering to the mandates of the Clean Water Act is a national priority.
Fish/Riparian	Yes/No	Rationale
Relevant	Yes	The Sulukna River provides crucial spawning habitat for sheefish (inconnu). In addition to inconnu, the Sulukna River provides important habitat to hundreds of coho and fall chum salmon, humpback whitefish, and least cisco. Riparian resources in the area are in proper functioning condition.
Important	Yes	Only for those waters draining into the Sulukna River. With the exception of the Sulukna River drainage, water draining directly into the Nowitna River is excluded from consideration. The Sulukna River is one of five known spawning habitats for sheefish (inconnu) in the Yukon River basin. In addition to inconnu, the Sulukna River provides important habitat to hundreds of coho and fall chum salmon, humpback whitefish, and least cisco. Riparian resources' ecological functions are integral to the overall condition and quality of this important aquatic habitat. This is because they define sediment transport processes, biochemical and nutrient cycling, and food web maintenance. In addition, riparian resources, when viewed independently of other resources, constitute only 3 percent of the BLM-managed lands in the planning area, which could be considered somewhat rare on a regional basis. Riparian resources perform a disproportionate number of biological and physical functions on a unit area basis. Because of this, protection is warranted in order to satisfy national priorities related to water quality, land health, floodplain function, and biodiversity maintenance.
Wildlife	Yes/No	Rationale
Relevant	Yes	The Sunshine Mountain Caribou Herd inhabits the lower third (upper headwaters of the Sulukna River) of the nominated Sulukna River ACEC expansion. This herd is made up of large-bodied Interior Alaska caribou that are representative of other small, non-migratory herds in the planning area. Their range is restricted to the high country west and north of McGrath. Generally, the herd can be found in the Sunshine Mountains

Sulukna River ACEC (Including Expansion)

		around Vom Frank Mountain, and in the Mystery Mountains.
Important	Yes	The Sunshine Mountain Caribou Herd is of local biological importance, but its success as a herd will not affect broader caribou population dynamics in the state. However, small, relic caribou populations are of interest to biologists because they are more susceptible to landscape level changes and local impacts and development. This feature of the Sunshine Mountain Caribou Herd gives it significant qualities beyond the local level. It potentially has qualities that make it fragile, sensitive, and irreplaceable. The herd is not endangered or threatened, but it is potentially vulnerable to adverse change, such as those in habitat and from development. The herd is not necessarily rare or endangered, but it is exemplary of small caribou herds in interior Alaska. It is unique because there are only a few non-migratory herds in the state.

3.3.44 Telsitna-Titna Rivers

Background: During the scoping process for the CYRMP, the BLM received an ACEC nomination for the Telsitna-Titna Rivers from the USFWS. The area is made up of unencumbered BLM-managed lands.

Nominator: USFWS (Koyukuk/Nowitna NWR)

Rationale for nomination provided by nominator: The Titna, Telsitna, and Sethkokna Rivers provide spawning and rearing habitat for Chinook salmon in the Nowitna Drainage (Eiler et al. 2004). These tributaries are some of the few Chinook salmon producers in the drainage. Given current statewide Chinook salmon returns, all known spawning locations are crucial for the persistence of this species. The primary reason for designating as an ACEC the habitat surrounding the Titna, Telsitna, and Sethkokna Rivers is to protect crucial spawning and rearing habitat for Chinook salmon. This species is used throughout Alaska for subsistence and commercial activities.

Salmon are an important subsistence species throughout the Yukon River watershed. Many people in villages along the river system use this species, and negative impacts on spawning and rearing habitats would affect populations beyond a local level. Protecting Chinook salmon spawning and rearing habitat along the Titna, Telsitna, and Sethkokna Rivers is crucial for the longevity of this species.

Congress recognized the importance of salmon by naming the species specifically for conservation in the ANILCA. This mandated that salmon be maintained in their natural diversity and that opportunities for subsistence use be maintained. Further, Section 302(5)(B) of the ANILCA ensures water quality and necessary water quantity in NWRs as one of four major purposes for which the NWRs were established. Additionally, the 1997 National Wildlife Refuge Improvement Act identified the “maintenance of adequate water quantity and water quality” as one of ten major principles set forth to conserve and protect refuge resources.

The USFWS stresses the importance of refuges to maintain water quality and quantity. The agency is concerned about any activities or actions on BLM-managed lands next to refuges that may compromise its abilities to meet these mandates.

Management guidelines should be provided to prevent actions that would degrade habitat and the water quality and quantity of the Telsitna-Titna Rivers. The USFWS requests that mining be limited and monitored. Mining has a high potential to negatively affect aquatic habitat and communities for long periods, with poorly documented restoration success in interior and northern Alaska (Carlson et al. 2000, Karle et al. 1998, USKH 2005a, 2005b, Weber 1986). Resources in these watersheds are sensitive to contamination and turbidity and provide essential subsistence requirements for the residents of many rural communities.

Area nominated: The nominated Telsitna-Titna Rivers ACEC is 27,900 acres. The proposal would designate two parcels of unencumbered BLM-managed land. They are between the southeast boundary of the Nowitna NWR and the northwest boundary of Denali National Park. Parcel 1 is 5,800 acres and surrounds the Telsitna River. The second parcel, at 22,100 acres, surrounds the mouth of the Telsitna River and the midsection of the Titna River. See **Figure 17**, Existing and Nominated ACECs/RNAs – Nowitna.

Values nominated: Fish/riparian

Telsitna-Titna Rivers

<i>Fish/Riparian</i>	Yes/No	Rationale
Relevant	Yes	<p>The ADFG (2014) documented the Titna River as having Chinook salmon. Because no data are available on salmon presence in or use of the Telsitna River, its nomination does not meet the relevance criteria at this time.</p> <p>Riparian resources, that are integral to the health and function of aquatic habitat in the nomination area are present and in proper functioning condition.</p>
Important	No	<p>Species of fish present in and the riparian community that is integral to the function of this aquatic habitat are typical of the area, with only locally significant qualities.</p> <p>Data available at this time suggest that the primary role of the Titna River is as a migratory corridor for adult salmon moving to spawning habitat farther upstream in the Sethkokna River and for juvenile salmon migrating downstream to the ocean. During the migration of juvenile salmon from the Sethkokna River, the Titna River also provides rearing habitat. The length of residency and the Titna's overall value as rearing habitat remain undocumented.</p>

This page intentionally left blank.

CHAPTER 4

SUMMARY OF FINDINGS, EVALUATION PROCESS, AND NEXT STEPS

4.1 SUMMARY OF FINDINGS

This chapter summarizes the findings of the ACEC evaluations from **Chapter 3. Table 3**, Summary of ACEC and RNA Evaluations, summarizes the existing and nominated ACECs and RNAs that were evaluated, the assessed values, and whether the criteria were met (including supporting information). Twenty-six ACECs were found to meet both the relevance and importance criteria and are displayed in **Figures 3, 5, 7, 9, 11, 13, 15, and 18 (Appendix A)**. Additionally, eight RNAs were found to meet the RNA criteria. Some of the RNAs also meet the criteria for designation as ACECs, for a total of 30 areas that meet the ACEC or RNA criteria.

These 30 ACECs and RNAs will be carried forward into the alternatives for the Draft RMP. Their evaluations in **Chapter 3** demonstrated that they met the relevance and importance criteria for at least one resource. The third requirement for ACEC designation, special management attention, will be addressed during the future formulation of alternatives (see **Section 2.1.3**). Additionally, during the formulation of alternatives, the acreages of the ACECs may change, as determined by the special management attention required for the particular ACEC resource. The size and management prescriptions for each ACEC may vary by alternative to reflect a balance between the goals and objectives of the alternative and values being protected (BLM Manual 1613.22.B.1-2).

Eight areas or nominations did not meet the relevance and importance criteria and will not be carried forward for evaluation in the RMP (see **Table 3**). In addition, six areas or nominations are not being carried forward for evaluation in the RMP as they were nominated, but all or portions of the nomination may be included in other areas being carried forward for analysis in the RMP. These are also noted in **Table 3**.

Table 3
Summary of ACEC and RNA Evaluations

Area	Existing or Nominated	Value	Meets Relevance? ¹	Meets Importance? ²	Meets ACEC Criteria	Meets RNA Criteria	Existing Acres	Nominated Acres	Acres Carried Forward for Analysis in EIS
Accomplishment Creek (Figures 2 and 3)	Nominated	Soil	Yes	Yes	Yes	N/A	0	41,000	41,000
		Water	Yes	Yes					
		Fish/Riparian	Yes	Yes					
		Geology	No	No					
Alatna River (Figures 8 and 9)	Nominated	Soil	Yes	Yes	Yes	N/A	0	5,500	5,500
		Water	Yes	Yes					
		Fish/Riparian	Yes	Yes					
		Wildlife	Yes	No					
		Geology	No	No					
Arms Lake RNA (Figures 17 and 18)	Existing	Soil	Yes	Yes	Yes	Yes	10,600	10,600	10,600
		Water	No	No					
		Fish/Riparian	No	No					
		Wildlife	No	No					
		Vegetation	Yes	Yes					
		Geology	No	No					
Atigun-Sagavanirktok River (Figure 2)	Nominated	Soil	Yes	Yes	Yes	N/A	0	105,000	0 (41,000 acres overlap Accomplishment Creek, 29,200 acres overlaps with Toolik Lake RNA and expansion)
		Water	Yes	Yes					
		Fish/Riparian	Yes	Yes					
		Geology	Yes	No					
		Cultural	No	No					

Table 3
Summary of ACEC and RNA Evaluations

Area	Existing or Nominated	Value	Meets Relevance? ¹	Meets Importance? ²	Meets ACEC Criteria	Meets RNA Criteria	Existing Acres	Nominated Acres	Acres Carried Forward for Analysis in EIS
Bishop Creek (Figure 16)	Nominated	Soil	No	No	No	N/A	0	16,200	0
		Water	No	No					
		Fish/Riparian	No	No					
		Wildlife	No	No					
		Special Status Species	No	No					
		Vegetation	No	No					
		Geology	No	No					
		Cultural	No	No					
Dalton Utility Corridor (Figures 2, 4, and 6)	Nominated	Soil	Yes	Yes	Yes	N/A	0	699,000 ³	0 (288,000 acres overlap multiple ACECs)
		Water	Yes	Yes					
		Fish/Riparian	Yes	Yes					
		Wildlife	Yes	Yes					
		Special Status Species	Yes	Yes					
		Vegetation	Yes	Yes					
		Geology	Yes	Yes					
		Cultural	No	No					
Dulbi River ACEC (Figure 14)	Existing	Soil	No	No	Yes	N/A	54,300	54,300	0 (11,700 acres overlap the Galena Mountain Caribou ACEC and expansion)
		Water	No	No					
		Wildlife	Yes	Yes					
		Special Status Species	No	No					
		Vegetation	No	No					
		Geology	No	No					

Table 3
Summary of ACEC and RNA Evaluations

Area	Existing or Nominated	Value	Meets Relevance? ¹	Meets Importance? ²	Meets ACEC Criteria	Meets RNA Criteria	Existing Acres	Nominated Acres	Acres Carried Forward for Analysis in EIS
Galbraith Lake ACEC (Figures 2 and 3)	Existing	Soil	No	No	Yes	N/A	53,900	53,900	53,900
		Water	No	No					
		Fish/Riparian	Yes	No					
		Wildlife	Yes	Yes					
		Geology	No	No					
		Cultural	Yes	Yes					
Galena Mountain Caribou ACEC (Figures 14 and 15)	Nominated for Expansion	Soil	No	No	Yes	N/A	19,400	671,000	507,000
		Water	No	No					
		Fish/Riparian	Yes	No					
		Wildlife	Yes	Yes					
		Special Status Species	No	No					
		Vegetation	No	No					
		Geology	No	No					
Hogatza River Tributaries ACEC (Figures 10 and 11)	Nominated for Expansion	Soil	Yes	Yes	Yes	N/A	5,200	62,000	60,000
		Water	Yes	Yes					
		Fish/Riparian	Yes	Yes					
		Wildlife	No	No					
		Special Status Species	No	No					
		Vegetation	No	No					
		Geology	No	No					
Indian River ACEC (Figures 8 and 9)	Existing	Soil	Yes	Yes	Yes	N/A	158,000	176,000	176,000
		Water	Yes	Yes					
		Fish/Riparian	Yes	Yes					
		Special Status Species	No	No					
		Vegetation	No	No					
		Geology	No	No					

Table 3
Summary of ACEC and RNA Evaluations

Area	Existing or Nominated	Value	Meets Relevance? ¹	Meets Importance? ²	Meets ACEC Criteria	Meets RNA Criteria	Existing Acres	Nominated Acres	Acres Carried Forward for Analysis in EIS
Ishtalitna Creek Hot Springs RNA (Figures 12 and 13)	Existing	Soil	Yes	Yes	Yes	Yes	1,000	1,000	1,100
		Water	Yes	Yes					
		Fish/Riparian	No	No					
		Wildlife	No	No					
		Special Status Species	No	No					
		Vegetation	Yes	Yes					
		Geology	No	No					
Jim River ACEC (Figures 6 and 7)	Nominated for Expansion	Soil	Yes	Yes	Yes	N/A	203,000	476,000	303,000
		Water	Yes	Yes					
		Fish/Riparian	Yes	Yes					
		Wildlife	Yes	Yes					
		Geology	No	No					
		Cultural	Yes	Yes					
Kanuti Hot Springs ACEC (Figure 6)	Existing	Soil	Yes	Yes	Yes	N/A	40	40	40
		Water	Yes	Yes					
		Fish/Riparian	Yes	No					
		Geology	Yes	No					
Kanuti-Kilolitna Rivers (Figure 12)	Nominated	Soil	No	No	Yes	Yes	0	266,000	0 (264,000 acres overlap Ray Mountains and 1,100 acres overlap Ishtalitna Creek Hot Springs RNA)
		Water	No	No					
		Fish/Riparian	Yes	No					
		Wildlife	Yes	Yes					
		Geology	No	No					
		Cultural	No	No					

Table 3
Summary of ACEC and RNA Evaluations

Area	Existing or Nominated	Value	Meets Relevance? ¹	Meets Importance? ²	Meets ACEC Criteria	Meets RNA Criteria	Existing Acres	Nominated Acres	Acres Carried Forward for Analysis in EIS
Klikhtentotzna Creek (Figures 10 and 11)	Nominated	Soil	Yes	Yes	Yes	N/A	0	108,000	108,000
		Water	Yes	Yes					
		Fish/Riparian	Yes	Yes					
		Wildlife	No	No					
		Special Status Species	No	No					
		Vegetation	No	No					
		Geology	No	No					
Koyukuk River Tributaries (Figures 8, 10, and 16)	Nominated	Soil	No	No	No	N/A	0	174,000	0 (14,100 acres overlap Indian River ACEC and expansion)
		Water	No	No					
		Fish/Riparian	Yes	No					
		Wildlife	No	No					
		Special Status Species	No	No					
		Vegetation	No	No					
		Geology	No	No					
		Cultural	No	No					
Lake Todatonten Pingos RNA (Figures 8 and 9)	Existing	Soil	Yes	Yes	Yes	Yes if combined with others	660	660	660
		Water	Yes	Yes					
		Fish/Riparian	No	No					
		Vegetation	Yes	Yes					
		Geology	Yes	No					
McQuesten Creek RNA (Figures 12 and 13)	Existing	Soil	Yes	Yes	Yes	Yes	3,900	3,900	3,900
		Water	Yes	Yes					
		Fish/Riparian	Yes	No					
		Wildlife	No	No					
		Special Status Species	No	No					
		Vegetation	Yes	Yes					
		Geology	Yes	No					

Table 3
Summary of ACEC and RNA Evaluations

Area	Existing or Nominated	Value	Meets Relevance? ¹	Meets Importance? ²	Meets ACEC Criteria	Meets RNA Criteria	Existing Acres	Nominated Acres	Acres Carried Forward for Analysis in EIS
Mentanontli River/Lake Todatonten (Figures 8 and 9)	Nominated	Soil	No	No	Yes	N/A	0	22,000	22,000
		Water	No	No					
		Fish/Riparian	Yes	Yes					
		Wildlife	No	No					
		Geology	No	No					
Midnight Dome/ Kalhabuk (Figures 4 and 5)	Nominated	Soil	Yes	Yes	Yes	N/A	0	10,000	10,000
		Water	No	No					
		Fish/Riparian	Yes	No					
		Wildlife	Yes	Yes					
		Special Status Species	No	No					
Nigu-Iteriak ACEC (Figure 2)	Existing	Geology	No	No	No	N/A	40,200	40,200	0
		Soil	No	No					
		Water	No	No					
		Fish/Riparian	No	No					
		Cultural	No	No					
Nugget Creek ACEC (Figures 4 and 5)	Existing	Soil	Yes	Yes	Yes	N/A	3,300	3,300	3,300
		Water	No	No					
		Fish/Riparian	No	No					
		Wildlife	Yes	Yes					
		Special Status Species	No	No					
		Geology	No	No					

Table 3
Summary of ACEC and RNA Evaluations

Area	Existing or Nominated	Value	Meets Relevance? ¹	Meets Importance? ²	Meets ACEC Criteria	Meets RNA Criteria	Existing Acres	Nominated Acres	Acres Carried Forward for Analysis in EIS
Nulato Hills ACEC (Figure 16)	Existing	Soil	No	No	No	N/A	40,700	40,700	0
		Water	No	No					
		Fish/Riparian	Yes	No					
		Wildlife	No	No					
		Special Status Species	No	No					
		Vegetation	No	No					
		Geology	No	No					
Pah River (Figure 10)	Nominated	Soil	No	No	No	N/A	0	50,600	0
		Water	No	No					
		Fish/Riparian	Yes	No					
		Wildlife	No	No					
		Special Status Species	No	No					
		Vegetation	No	No					
		Geology	No	No					
		Cultural	No	No					
Poss Mountain ACEC (Figures 4 and 5)	Nominated for Expansion	Soil	Yes	Yes	Yes	N/A	8,700	25,500	25,500
		Water	No	No					
		Fish/Riparian	Yes	No					
		Wildlife	Yes	Yes					
		Special Status Species	No	No					
		Geology	No	No					

Table 3
Summary of ACEC and RNA Evaluations

Area	Existing or Nominated	Value	Meets Relevance? ¹	Meets Importance? ²	Meets ACEC Criteria	Meets RNA Criteria	Existing Acres	Nominated Acres	Acres Carried Forward for Analysis in EIS
Ray Mountains (Figures 12 and 13)	Nominated for Expansion	Soil	No	No	Yes	N/A	129,000 (Tozitna Subunit North) and 62,600 (Tozitna Subunit South)	938,000	1,540,000
		Water	No	No					
		Fish/Riparian	Yes	No					
		Wildlife	Yes	Yes					
		Special Status Species	No	No					
		Geology	No	No					
Redlands Lake RNA (Figures 17 and 18)	Existing	Soil	Yes	Yes	Yes	Yes	3,800	3,800	3,800
		Water	No	No					
		Fish/Riparian	Yes	No					
		Wildlife	No	No					
		Vegetation	Yes	Yes					
		Geology	No	No					
		Cultural	No	No					
Sethkokna River (Figures 17 and 18)	Nominated	Soil	Yes	Yes	Yes	N/A	0	319,000	299,000
		Water	Yes	Yes					
		Fish/Riparian	Yes	Yes					
		Wildlife	No	No					
		Special Status Species	No	No					
		Vegetation	No	No					
		Geology	No	No					

Table 3
Summary of ACEC and RNA Evaluations

Area	Existing or Nominated	Value	Meets Relevance? ¹	Meets Importance? ²	Meets ACEC Criteria	Meets RNA Criteria	Existing Acres	Nominated Acres	Acres Carried Forward for Analysis in EIS
Snowden Mountain ACEC (Figure 4)	Nominated for Expansion	Soil	Yes	Yes	Yes	N/A	29,700	102,000	0 (102,000 acres overlaps Sukakpak Mountain ACEC)
		Water	No	No					
		Fish/Riparian	Yes	No					
		Wildlife	Yes	Yes					
		Special Status Species	No	No					
		Geology	Yes	Existing: Yes Expansion: No					
South Fork Koyukuk River (Figures 6 and 7)	Nominated	Soil	Yes	Yes	Yes	N/A	0	417,000	415,000
		Water	Yes	Yes					
		Fish/Riparian	Yes	Yes					
		Geology	No	No					
South Todatonten Summit RNA (Figures 8 and 9)	Existing	Soil	Yes	Yes	Yes	Yes if combined with others	660	660	660
		Water	Yes	Yes					
		Fish/Riparian	No	No					
		Vegetation	Yes	Yes					
		Geology	Yes	No					
Spooky Valley RNA (Figures 12 and 13)	Existing	Soil	No	No	Yes	Yes	10,100	10,100	8,800
		Water	No	No					
		Fish/Riparian	No	No					
		Wildlife	Yes	Yes					
		Special Status Species	Yes	No					
		Vegetation	Yes	Yes					
		Geology	Yes	No					

Table 3
Summary of ACEC and RNA Evaluations

Area	Existing or Nominated	Value	Meets Relevance? ¹	Meets Importance? ²	Meets ACEC Criteria	Meets RNA Criteria	Existing Acres	Nominated Acres	Acres Carried Forward for Analysis in EIS
Sukakpak Mountain ACEC (Figures 4 and 5)	Nominated for Expansion	Soil	No	No	Yes	N/A	3,500	18,700	125,000
		Water	No	No					
		Fish/Riparian	Yes	No					
		Wildlife	Yes	No					
		Special Status Species	No	No					
		Geology	Yes	Existing: Yes Expansion: No					
		Scenic	Yes	Yes					
Sulukna River ACEC (Figures 17 and 18)	Nominated for Expansion	Soil	Yes	Yes	Yes	N/A	24,600	405,000	398,000
		Water	Yes	Yes					
		Fish/Riparian	Yes	Yes					
		Wildlife	Yes	Yes					
Telsitna-Titna Rivers (Figure 17)	Nominated	Soil	No	No	No	N/A	0	27,900	0
		Water	No	No					
		Fish/Riparian	Yes	No					
		Wildlife	No	No					
		Special Status Species	No	No					
		Vegetation	No	No					
		Geology	No	No					
Toolik Lake RNA (Figures 2 and 3)	Nominated for Expansion	Soil	No	No	Yes	Yes	77,200	108,000	106,000
		Water	No	No					
		Fish/Riparian	Yes	No					
		Special Status Species	Yes	Yes					
		Vegetation	Yes	Yes					
		Geology	No	No					

Table 3
Summary of ACEC and RNA Evaluations

Area	Existing or Nominated	Value	Meets Relevance? ¹	Meets Importance? ²	Meets ACEC Criteria	Meets RNA Criteria	Existing Acres	Nominated Acres	Acres Carried Forward for Analysis in EIS
Tozitna River ACEC (Figure 12)	Existing	Soil	Yes	Yes	Yes	N/A	843,000	843,000	0 (838,000 acres overlap the Ray Mountains nomination)
		Water	Yes	Yes					
		Fish/Riparian	Yes	Yes					
		Wildlife	Yes	Yes					
		Special Status Species	No	No					
		Vegetation	No	No					
		Geology	No	No					
Traditional Hunting and Fishing Areas for Loudon Tribe (Figures 14 and 16)	Nominated	Soil	No	No	No	N/A	0	43,100	0 (5,500 acres overlap Galena Mountain Caribou ACEC and expansion)
		Water	No	No					
		Fish/Riparian	No	No					
		Wildlife	No	No					
		Special Status Species	No	No					
		Vegetation	No	No					
		Geology	No	No					
Upper Kanuti River (Figures 6 and 7)	Nominated	Cultural	No	No	Yes	N/A	0	232,000 ⁴	975,000
		Soil	No	No					
		Water	No	No					
		Fish/Riparian	Yes	No					
		Wildlife	Yes	Yes					
		Special Status Species	Yes	No					
		Geology	No	No					
		Cultural	Yes	Yes					

Table 3
Summary of ACEC and RNA Evaluations

Area	Existing or Nominated	Value	Meets Relevance? ¹	Meets Importance? ²	Meets ACEC Criteria	Meets RNA Criteria	Existing Acres	Nominated Acres	Acres Carried Forward for Analysis in EIS
Upper Teedriinjik (Chandalar) River (Figures 6 and 7)	Nominated	Soil	Yes	Yes	Yes	N/A	0	295,000	296,000
		Water	Yes	Yes					
		Fish/Riparian	Yes	Yes					
		Wildlife	No	No					
		Special Status Species	No	No					
		Vegetation	No	No					
		Geology	No	No					
		Cultural	No	No					
West Fork Atigun River ACEC (Figures 2 and 3)	Nominated for Expansion	Soil	Yes	Yes	Yes	N/A	9,200	33,500	33,500
		Water	No	No					
		Fish/Riparian	No	No					
		Wildlife	Yes	Yes					
		Special Status Species	No	No					
		Geology	No	No					
Wheeler Creek (Figures 10 and 11)	Nominated	Soil	Yes	Yes	Yes	N/A	0	147,000	145,000 (excludes nominated lands outside the watershed)
		Water	Yes	Yes					
		Fish/Riparian	Yes	Yes					
		Wildlife	No	No					
		Special Status Species	No	No					
		Vegetation	No	No					
		Geology	No	No					

Table 3
Summary of ACEC and RNA Evaluations

Area	Existing or Nominated	Value	Meets Relevance? ¹	Meets Importance? ²	Meets ACEC Criteria	Meets RNA Criteria	Existing Acres	Nominated Acres	Acres Carried Forward for Analysis in EIS
Yukon River Watersheds (Figures 14 and 16)	Nominated	Soil	No	No	No	N/A	0	78,200	0
		Water	No	No					
		Fish/Riparian	Yes	No					
		Wildlife	No	No					
		Special Status Species	No	No					
		Vegetation	No	No					
		Geology	No	No					
		Cultural	No	No					

¹ Yes means that the area meets the relevance criteria for this value; No means the area does not meet the relevance criteria for this value (see **Section 2.1.1**, Relevance)

² Yes means that the area meets the importance criteria for this value; No means the area does not meet the importance criteria for this value (see **Section 2.1.2**, Importance); N/A indicates that the area was not evaluated for importance criteria for this value because it does not meet relevance criteria for this value

³ Portions of the nominated area that overlap with other proposed or existing ACECs meet the criteria. The larger nominated area was not found to meet the criteria in its entirety.

⁴ The USFWS nominated a 232,000-acre area; the BLM is considering a larger 975,000-acre area that partially overlaps the USFWS nomination.

4.2 EVALUATION PROCESS

In compiling a list of areas to be analyzed in this report, the BLM considered the public comments received on ACEC modifications, removals, and nominations (**Sections 3.1 and 3.2**). The BLM followed guidance set forth in BLM Manual 1613, 43 CFR 1610.7-2, and 43 CFR 8223 and considered:

- Existing ACECs and RNAs
- Areas recommended for ACEC consideration (internal and external nominations)
- Areas identified through inventorying and monitoring
- Adjacent designations of other federal and state agencies

BLM staff, other agencies, or members of the public can nominate ACECs at any time. During the RMP revision scoping process, the BLM solicited nominations and comments from the public and other agencies. The agency distributed a map of special designation areas at the scoping meetings and made the map available on the RMP website, <http://www.blm.gov/ak/cyrmp>.

An interdisciplinary team of BLM staff reviewed both new nominations and information on existing designations to ensure that all relevant and important values within the planning area were considered. Existing RNAs were considered using both the relevance and importance criteria for ACECs as well as RNA definitions in 43 CFR 8223. Given the size of the planning area, the large number of existing ACECs/RNAs, and the number of nominations, the BLM grouped the ACECs into smaller areas to facilitate review and display on maps. Additionally many of the nominations overlapped either existing ACECs or other nominations. **Figure 1** displays the map extents for groups of ACECs. Multiple nominations for the same area were considered together using the largest geographical extent.

4.3 NEXT STEPS

The BLM will carry forward for consideration the areas found to meet both the relevance and importance criteria to determine whether any special management would be required (**Section 2.1.3**) under alternatives for potential designation and management in the RMP (BLM Manual 1613.21) as ACECs. The BLM will use public comments obtained through future public comment submissions and BLM specialists' knowledge to make future ACEC determinations. As such, the BLM will rely on public comments obtained during additional planning phases that may help to inform BLM decisions about designating the future ACECs within the planning area. These planning phases are:

1. Public availability of the ACEC report on the RMP website www.blm.gov/cyrmp.
2. The preliminary alternatives outreach and public comment period on preliminary alternatives. Date to be determined.
3. The public comment period on the Draft Central Yukon RMP/EIS. Date to be determined.

Additional ACEC nominations received before publication of the Draft RMP/EIS will be considered if timely enough to allow incorporation into the Draft. Nominations received after publication of the Draft RMP/EIS will be evaluated for relevance and importance. Those meeting

the criteria may be considered in the Proposed RMP/Final EIS or deferred until the next planning cycle.

CHAPTER 5

LIST OF PREPARERS

Name	Role/Responsibility
Cole, Jeanie	Primary POC, Team Lead
Esse, David	Soil, Water, Air
Faughn, Mark	GIS Specialist, Mapping, GIS Data
Hedman, Bill	Cultural, Paleontological
Hammond, Tim	Assistant Field Manager
Jacobson, Shelly	Field Manager
Jodwalis, Lisa	Visual Resources
Julianus, Erin	Wildlife, Subsistence
Karlen, Bob	Fish and Riparian
Kretsinger, Carl	Fish and Riparian
McClain, Holli	Visual Resources
McMillan, Jennifer	Special Status Species, Ecology, Vegetation
VandeWeg, Darrel	Locatable and Mineral Materials
Estep, Melissa	EMPSi, Document Production
Jonker, Jenna	EMPSi, GIS Mapping
Krebs, Kate	EMPSi, Document Production

This page intentionally left blank.

CHAPTER 6

REFERENCES CITED

- ADFG (Alaska Department of Fish and Game). 2013. *Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes*.
- _____. 2014. *Catalog of Waters Important for Spawning, Rearing, or Migration of Anadromous Fishes – Interior Region, Effective June 1, 2014*. Internet website: <http://www.adfg.alaska.gov>.
- Aigner, J. S., and B. L. Gannon. 1980. *Historic and Prehistoric Land Use in Interior Alaska: Delta North to Prudhoe Bay*. Background report for Archaeological Survey Along the Proposed Natural Gas Pipeline from Delta Junction to Prudhoe Bay.
- Alaska Department of Natural Resources. 2010. *Dalton Highway Scenic Byway Corridor Partnership Plan*. Alaska Department of Natural Resources, Division of Parks and Outdoor Recreation, Interpretation and Education Unit. Prepared for Alaska Department of Transportation and Public Facilities, State Scenic Byways Program. March 2010.
- Andersen, D. B., C. L. Brown, R. J. Walker, and K. Elkin. 2004. *Traditional Ecological Knowledge and Contemporary Subsistence Harvest of Non-Salmon Fish in the Koyukuk River Drainage, Alaska*. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 282, Juneau. Internet website: <http://www.adfg.alaska.gov/techpap/tp282.pdf>.
- Armstrong and Halpin. 1980. *Cited in: BLM (United States Department of the Interior, Bureau of Land Management). 1983. Management Situation Analysis, Central Yukon Planning Area*. November 1983.
- Arnett, H. 2005. *Harrison Creek Reclamation, Phase I: An Overview of Issues and Approaches for the Reclamation of Placer Mined Lands*. Doc. No. WO 769306. Prepared by USKH, Inc., for the BLM, Washington, DC.
- Barton, L. H. 1984. *A Catalog of Yukon River Salmon Spawning Escapement Surveys*. Alaska Department of Fish and Game, Technical Data Report 121, Juneau, Alaska.

- BLM (United States Department of the Interior, Bureau of Land Management). 1986. *Resource Management Plan and Record of Decision for the Central Yukon Planning Area*. September 26, 1986.
- _____. 1989. *Utility Corridor Proposed Resource Management Plan/Final Environmental Impact Statement Record of Decision*. BLM, Arctic District Office. September 27, 1989.
- _____. 1991. *Utility Corridor Resource Management Plan/Environmental Impact Statement Record of Decision*. BLM, Arctic District Office. January 11, 1991.
- _____. 2002. *Renewal of the Federal Grant for the Trans-Alaska Pipeline System Right-of-Way Final EIS*. BLM, Alaska State Office, Anchorage. November 2002.
- _____. 2005. *Fish Streams along the Trans-Alaska Pipeline System*, A compilation of selected references with current TAPS Stationing. Fourth Edition. BLM Alaska Open File Report 105. BLM/AK/ST-06/004+6674+990. U.S. Department of the Interior, Bureau of Land Management, Anchorage, Alaska.
- Brock and Burke. 1980. *Cited in: BLM (United States Department of the Interior, Bureau of Land Management). 1983. Management Situation Analysis, Central Yukon Planning Area*. November 1983.
- Brown, Jerry, and Krieg, R. A. 1983. *Guidebook to permafrost and related features along the Elliott and Dalton Highways, Fox to Prudhoe Bay, Alaska: Alaska Division of Geological & Geophysical Surveys Guidebook 4*.
- Brown, R. J. 2004. *A biological assessment of whitefish species harvested during the spring and fall in the Selawik River Delta, Selawik National Wildlife Refuge, Alaska*. Internet website: http://www.fws.gov/alaska/fisheries/fish/Technical_Reports/t_2004_77.pdf.
- _____. 2009. *Distribution and Demographics of Whitefish Species in the Upper Koyukuk River Drainage, Alaska, with Emphasis on Seasonal Migration and Important Habitats of Broad Whitefish and Humpback Whitefish*. U.S. Fish and Wildlife Service, Alaska Fisheries Technical Report Number 104, Fairbanks.
- _____. 2013. *Seasonal migrations and essential habitats of broad whitefish, humpback whitefish, and least cisco in the Selawik River Delta, as inferred from radiotelemetry data, 2004-2006*. Internet website: http://www.fws.gov/alaska/fisheries/fish/Data_Series/d_2013_3.pdf.
- Brown R. J., C. Brown, N. M. Braem, W. K. Carter, III, N. Legere, and L. Slayton. 2012. *Whitefish biology, distribution, and fisheries in the Yukon and Kuskokwim River drainages in Alaska: a synthesis of available information*. U.S. Fish and Wildlife Service, Alaska Fisheries Data Series Report Number 2012-4. Fairbanks, Alaska. Internet website: http://www.fws.gov/alaska/fisheries/fish/Data_Series/d_2012_4.pdf.

- Carlson, J. G. 2012. *Abundance and Run Timing of Adult Salmon in the Gisasa River, Koyukuk National Wildlife Refuge, Alaska, 2011*. U.S. Fish and Wildlife Service, Alaska Fisheries Data Series Report Number 2012-6. Fairbanks.
- Carlson, R. F., R. Trent, K. Karle, A. Tidwell, and B. Shalk. 2000. *Development of Improved Techniques to Reclaim Placer-Mined Watersheds. Phase I—Assessment of Past Reclamation Activities. Phase II—Final Site Selection, Design, Construction and Evaluation of a Demonstration Project*. Final Report. Department of Civil and Environmental Engineering, University of Alaska Fairbanks.
- Corbett, D. G. 2006. *Survey Report of Kanuti NWR BAER Report*. USFWS, Division of Visitor Services and Fire.
- Craig, P. C. 1989. *An introduction to anadromous fishes in the Alaskan Arctic*. Biological Papers of the University of Alaska, 24:27-54.
- Craig, P., and P. J. McCart. 1974. *Fall spawning and overwintering areas of fish populations along routes of proposed pipeline between Prudhoe Bay and the Mackenzie Delta 1972-1973*. Chapter 3 in P. J. McCart, ed. Fisheries research associated with proposed gas pipeline routes in Alaska, Yukon, and Northwest Territories. Arctic Gas Biological Report Series Vol. 15.
- Craig, T. and P. Leonard. 2009. *Dall Sheep Use of Areas of Critical Environmental Concern in the Utility Corridor Management Area, Alaska*. BLM/AK Open File Report 114. November 2009. Internet website: http://www.blm.gov/style/medialib/blm/ak/aktest/ofr.Par.14974.File.dat/OFR_114_web_2009.pdf.
- Dillon, J.T., A.G. Harris, J.T. Dutro, D.N. Solie, J.D. Blum, D.L. Jones, and D.G. Howell. 1988. *Preliminary geologic map and section of Chandalar D-6 and parts of Chandlar C-6 and Wiseman C-1 and D-1 quadrangles, Alaska*. Alaska Department of Natural Resources, Division of Geological and Geophysical Surveys. Report of Investigation 88-5, 1 sheet, scale 1:63,360.
- Dillon, John T. 1982. *Source of Lode- and Placer-gold deposits of the Chandalar and Upper Koyukuk Districts, Alaska*. Alaska Open-file Report 158. Alaska Department of Natural Resources, Division of Geological and Geophysical Surveys. September 1982.
- Eiler, J. H., T. R. Spencer, J. J. Pella, M. M. Masuda, and R. R. Holder. 2004. *Distribution and Movement Patterns of Chinook Salmon Returning to the Yukon River Basin in 2000-2002*. U.S. Department of Commerce, NOAA Technical Memo. NMFS-AFSC-148.
- Eiler, J. H., T. R. Spencer, J. J. Pella, and M. M. Masuda. 2006a. *Stock composition, Run Timing, and Movement Patterns of Chinook Salmon Returning to the Yukon River Basin in 2003*. U.S. Department of Commerce, NOAA Technical Memo. NMFS-AFSC-163.
- _____. 2006b. *Stock Composition, Run Timing, and Movement Patterns of Chinook Salmon Returning to the Yukon River Basin in 2004*. U.S. Department of Commerce, NOAA Technical Memo. NMFS-AFSC-165.

- Esse, D. A. 2011. *Characteristics of the Sulukna River Spawning Population of Inconnu Yukon River Drainage, Alaska*. Thesis for Masters Degree, University of Alaska Fairbanks.
- Esse, D.A. and C.F. Kretsinger. 2009. *Abundance and run timing of adult salmon in Clear Creek, Hogatza River, Alaska, 2000-2005*. Program Report DIFR BLM/AK/F03000-6500/FY09/1120/07. Unpublished. Bureau of Land Management, Central Yukon Field Office, Fairbanks, Alaska.
- Farquhar, N., and J. Schubert (editors). 1980. *Ray Mountains, Central Alaska: Environmental Analysis and Resources Statement*. Middlebury College, Middlebury, Vermont.
- Fish, J.T. 1998. *Radio-telemetry studies of Arctic grayling in the Jim River (Dalton Highway) during 1997-1998*. Fishery Manuscript Report No. 98-4. Alaska Department of Fish and Game, Division of Sport Fish, Fairbanks, Alaska.
- Gilbert, Matthew. 2013. *Thazzik Mountain Ancient Land Use Report*. Unpublished, based on personal communication with F. Burns.
- Glesne, R. S., W. K. Carter III, and D. W. Daum. 2011. *Lake habitat and fish surveys on Interior Alaska National Wildlife Refuges, 1984-1986*. Report Number: 2011-12. Internet website: http://www.fws.gov/alaska/fisheries/fish/Data_Series/d_2011_12.pdf.
- Hander, R. F., R. J. Brown, and T. J. Underwood. 2008. *Comparison of inconnu spawning abundance estimates in the Selawik River, 1995, 2004, and 2005, Selawik National Wildlife Refuge*. U.S. Fish and Wildlife Service, Fairbanks Fish and Wildlife Field Office, Alaska Fisheries Technical Report Number 99. Internet website: http://www.fws.gov/alaska/fisheries/fish/Technical_Reports/t_2007_99.pdf.
- Headlee, P.G. 1996. *Abundance and run timing of adult salmon and water quality in Clear Creek (Hogatza River), Northwest Alaska, 1995*. Water Resources Report No. 96-1. Tanana Chiefs Conference, Inc., Fairbanks, Alaska.
- Holder, R. R., and D. Senecal-Albrecht (compilers). 1998. *Yukon River Comprehensive Salmon Plan for Alaska*. Alaska Department of Fish and Game, Juneau.
- Horne, Jon S., Tim Craig, Kyle Joly, Glenn W. Stout, Merben R. Cebrian, and Edward O. Garton. 2014. *Population Characteristics, Space Use and Habitat Selection of Two Non-Migratory Caribou Herds in Central Alaska, 1994–2009*. Rangifer, Vol. 34, Issue 1. March 2014.
- JTC (Joint Technical Committee of the Yukon River US/Canada Panel). 2012. *Yukon River salmon 2011 season summary and 2012 season outlook*. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A12-01, Anchorage.
- Juday, Glenn P. 1983. *Ray Mountains Proposed Natural Research Areas: Ishtalitna Creek Hot Springs, McQuesten Creek, and Spooky Valley*. Report prepared for the Bureau of Land Management in Alaska.

- Karle, K. F., P. E., J. M. Merlie, and R. F. Carlson. 1998. *Placer-Mined Site Reclamation Evaluation in Alaska*. In: *Engineering Approaches to Ecosystem Restoration* (D. F. Hayes, editor). Proceedings of the Wetlands Engineering and River Restoration Conference, Denver, Colorado. Pages 586-591.
- Kretsinger, C. and R. Brown. 2004. *Interim Progress Report: Sulukna River (Nowitna River drainage) Inconnu Spawning Habitat Investigation*. Unpublished. Bureau of Land Management, Fairbanks, Alaska.
- Kretsinger, Carl F., and Susan M. Will. 1995. *Indian River ACEC Aquatic Habitat Management Plan*. BLM, Kobuk District Office, Fairbanks, Alaska. May 1995.
- Kretsinger, Carl F., Susan M. Will, Diane R. Hunt, and Matt I. Mahran. 1994. *Hogatza ACEC Aquatic Habitat Management Plan*. BLM, Kobuk District, Alaska. May 1994.
- Lipkin, Robert. 2007. *Investigation of Potentially Sensitive Plant Communities in the Old Dummy Burn, Kanuti National Wildlife Refuge, Alaska, 2006*. Prepared by Alaska Natural Heritage Program, Environment and Natural Resources Institute, University of Alaska-Anchorage.
- Lipkin, R., and C. Parker. 1995. *Rare vascular plants of the BLM Dalton Highway Utility Corridor*. Alaska Natural Heritage Program, University of Alaska Anchorage and University of Museum Fairbanks. August 1995.
- Matthews. 1980. *Cited in: BLM (United States Department of the Interior, Bureau of Land Management). 1983. Management Situation Analysis, Central Yukon Planning Area*. November 1983.
- McCart, P., P. Craig, and H. Bain. 1972. *Report on Fisheries Investigations in the Sagavanirtok River and Neighboring Drainages*. Aquatic Environmental Limited, Biological consultants. Calgary, Alberta, Canada.
- McCart, P. (editor). 1974. *Fisheries Research Associated with Proposed Gas Pipeline Routes in Alaska, Yukon, and Northwest Territories*. Aquatic Environmental Limited, Biological consultants. Calgary, Alberta, Canada.
- Melegari, J.L. 2012. *Abundance and run timing of adult fall chum salmon in the Chandalar River, Yukon Flats National Wildlife Refuge, Alaska, 2011*. Alaska Fisheries Data Series Number 2012-7. U.S. Fish and Wildlife Service, Fairbanks, Alaska.
- Moonman. 1982. *Cited in: BLM (United States Department of the Interior, Bureau of Land Management). 1983. Management Situation Analysis, Central Yukon Planning Area*. November 1983.
- Mulligan, J. J. 1974. *Mineral Resources of the Trans-Alaska Pipeline Corridor: U.S. Bureau of Mines Information Circular 8626*. 24 pp., 9 sheets, scale 1:250,000.
- Netsch, N. F. 1975. *Fishery resources of waters along the route of the Trans-Alaska pipeline between Yukon River and Atigun Pass in north central Alaska*. U.S. Fish and Wildlife Service, Resource Publication 124, Washington.

- Patton, W. W., and T. P. Miller. 1970. *Preliminary Geologic Investigations in the Kanuti River Region, Alaska. Contributions to Economic Geology*. Geologic Survey Bulletin 1312-J.
- Rost, P. J. 1986. *Aerial Surveys for Summer and Fall Salmon in the Upper Yukon River Drainage, 1985*. U.S Fish and Wildlife Service, Fairbanks Fishery Resources Progress Report Number: FY86-9.
- Saperstein, L. 1999. *Kanuti-Kilolitna River float survey: July 12-20, 1999*. US Fish and Wildlife Service internal trip report.
- _____. 2000. *USFWS Trip Report*. Kanuti-Kilolitna River Float Survey July 1999.
- Spencer, T. and J.H. Eiler. 2004. *Aerial Tracking Surveys of Sections of the Yukon River Basin*. Study Number URE-18N-04. Alaska Department of Fish and Game, Anchorage, Alaska.
- Spindler, M. 2007. *Upper Kanuti River float survey*. US Fish and Wildlife Service internal trip report.
- Tarlov. 1980. *Cited in: BLM (United States Department of the Interior, Bureau of Land Management). 1983. Management Situation Analysis, Central Yukon Planning Area*. November 1983.
- Troyer, K.D. 1993. *Sonar enumeration of chum salmon in the South Fork Koyukuk River, 1990*. U.S. Fish and Wildlife Service, Fishery Resource Office, Alaska Fisheries Technical Report Number 19, Fairbanks, Alaska.
- Underwood, T. J. 2000. *Abundance, length composition, and migration of spawning inconnu in the Selawik River, Alaska*. *North American Journal of Fisheries Management*, 20:386-393.
- Underwood, T. J., K. Whitten, and K. Secor. 1998. *Population characteristics of spawning inconnu (sheefish) in the Selawik River, Alaska, 1993-1996, Final Report*. Internet website: http://www.fws.gov/alaska/fisheries/fish/Technical_Reports/t_1998_49.pdf.
- USFWS (United States Department of the Interior, Fish and Wildlife Service). 2006. *Kanuti National Wildlife Refuge Progress Report FY07-01*. Aerial surveys of molting geese on Kanuti National Wildlife Refuge. July 2006.
- _____. 2007. *Kanuti National Wildlife Refuge Progress Report FY07-05*. Aerial surveys of geese on Kanuti National Wildlife Refuge. May and July 2007.
- _____. 2015. *Arctic National Wildlife Refuge Revised Comprehensive Conservation Plan Final Environmental Impact Statement*. January 2015. Internet website: <http://www.fws.gov/home/arctic-ccp/>.
- USKH. 2005a. *Harrison Creek Reclamation, Phase I. An Overview of Issues and Approaches for the Reclamation of Placer-Mined Lands*. Final report. Prepared for the BLM. Pages 1-23.
- _____. 2005b. *Harrison Creek Reclamation, Phase I. Issues and Approaches for the Reclamation of Placer-Mined Lands*. Final report. Prepared for the BLM. Pages 24-A1.

- VanHatten, G. K. 2005. *Abundance and Run Timing of Adult Salmon in the Kateel River, Koyukuk National Wildlife Refuge, Alaska, 2001-2003*. U.S. Fish and Wildlife Service, Alaska Fisheries Data Series Report Number 2005-2. Fairbanks, Alaska.
- VanHatten, G.K. 1997. *Abundance and run timing of adult summer run chum salmon (Oncorhynchus keta) and water quality in Clear Creek (Hogatza River), Northwest Alaska, 1997*. Water Resources Report No. 97-3. Tanana Chiefs Conference, Inc., Fairbanks, Alaska.
- _____. 1998. *Abundance and run timing of adult summer run chum salmon (Oncorhynchus keta) and water quality in Clear Creek (Hogatza River), Northwest Alaska, 1998*. Water Resources Report No. 98-1. Tanana Chiefs Conference, Inc., Fairbanks, Alaska.
- Vivant, T. 2005. *Eastern North Slope Dolly Varden Stock Assessment. Fishery Data Report No. 05-07*. ADFG, Division of Sport Fish, Fairbanks, Alaska. March 2005.
- Weber, P. K. 1986. *Downstream Effects of Placer Mining in the Birch Creek Basin, Alaska*. Technical Report No. 86-7. Alaska Department of Fish and Game. Division of Habitat. Juneau, Alaska.
- Wiswar, D.W. 1997. *Abundance and run timing of adult salmon in the South Fork Koyukuk River, Kanuti National Wildlife Refuge, Alaska, 1996*. U.S. Fish and Wildlife Service, Fairbanks Fisheries Resource Office, Alaska Fishery Data Series Number 97-5, Fairbanks, Alaska.
- _____. 1998. *Abundance and run timing of adult salmon in the South Fork Koyukuk River, Kanuti National Wildlife Refuge, Alaska, 1997*. U.S. Fish and Wildlife Service, Fairbanks Fisheries Resource Office, Alaska Fishery Data Series Number 98-1, Fairbanks, Alaska.

This page intentionally left blank.

Appendix A

Figures

This page intentionally left blank.

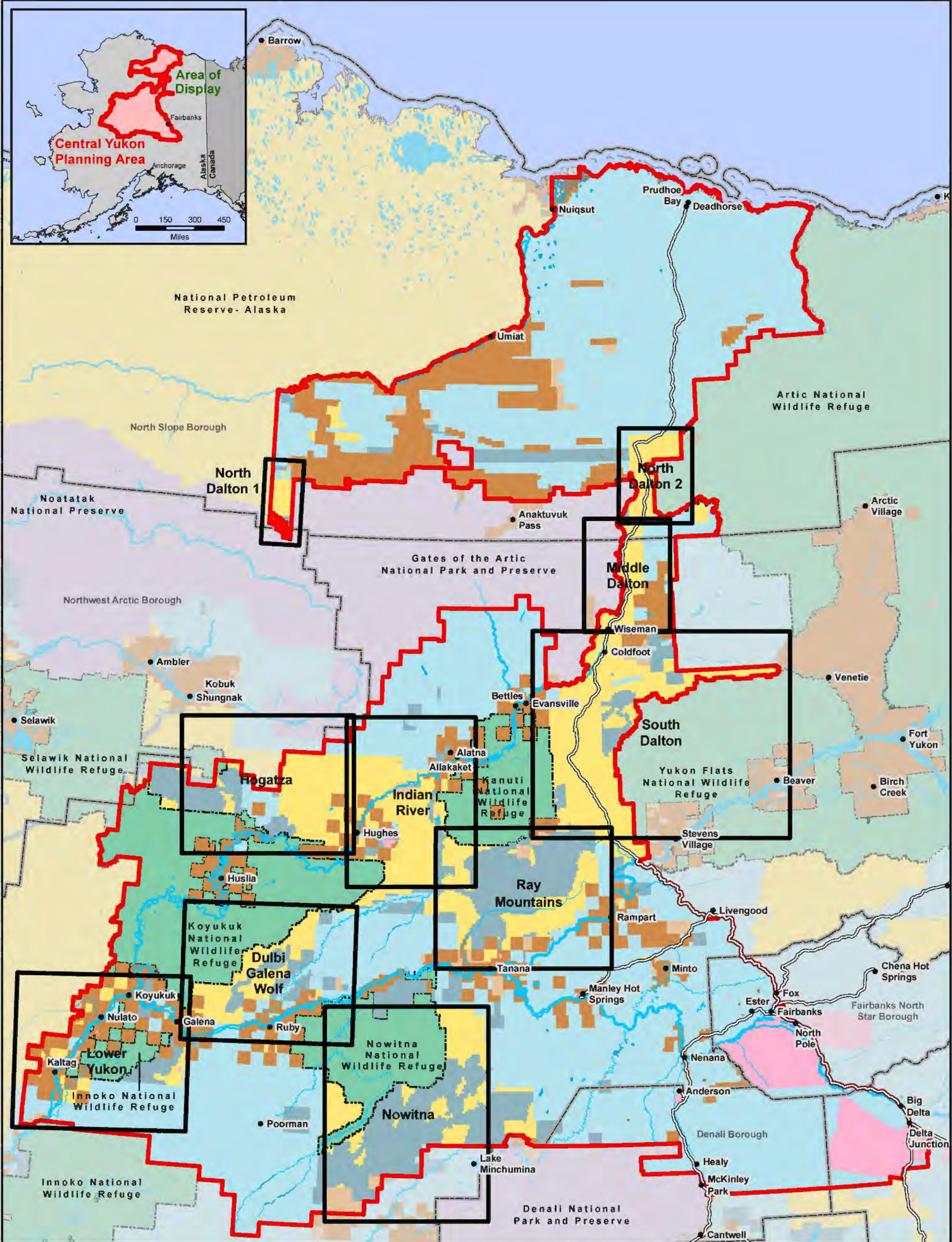
APPENDIX A

FIGURES

- 1 Planning Area and ACEC Locator Overview
- 2 Existing and Nominated ACECs/RNAs – North Dalton
- 3 ACECs Found to Meet the Relevance and Importance Criteria – North Dalton
- 4 Existing and Nominated ACECs/RNAs – Middle Dalton
- 5 ACECs Found to Meet the Relevance and Importance Criteria – Middle Dalton
- 6 Existing and Nominated ACECs/RNAs – South Dalton
- 7 ACECs Found to Meet the Relevance and Importance Criteria – South Dalton
- 8 Existing and Nominated ACECs/RNAs – Indian River
- 9 ACECs Found to Meet the Relevance and Importance Criteria – Indian River
- 10 Existing and Nominated ACECs/RNAs – Hogatza
- 11 ACECs Found to Meet the Relevance and Importance Criteria – Hogatza
- 12 Existing and Nominated ACECs/RNAs – Ray Mountains
- 13 ACECs Found to Meet the Relevance and Importance Criteria – Ray Mountains
- 14 Existing and Nominated ACECs/RNAs – Dulbi Galena Wolf
- 15 ACECs Found to Meet the Relevance and Importance Criteria – Dulbi Galena Wolf
- 16 Existing and Nominated ACECs/RNAs – Lower Yukon*
- 17 Existing and Nominated ACECs/RNAs – Nowitna
- 18 ACECs Found to Meet the Relevance and Importance Criteria – Nowitna

**There are no ACECs found to meet the relevance and importance criteria in the Lower Yukon area.*

This page intentionally left blank.



- Map extents
- RMP Planning Area
- Borough
- Surface Ownership
 - Bureau of Land Management
 - Native Selected
 - State Selected
 - National Park Service
- US Fish and Wildlife Service
- Military
- State
- Native Lands
- Water

Figure 1: Planning Area and ACEC Locator Overview

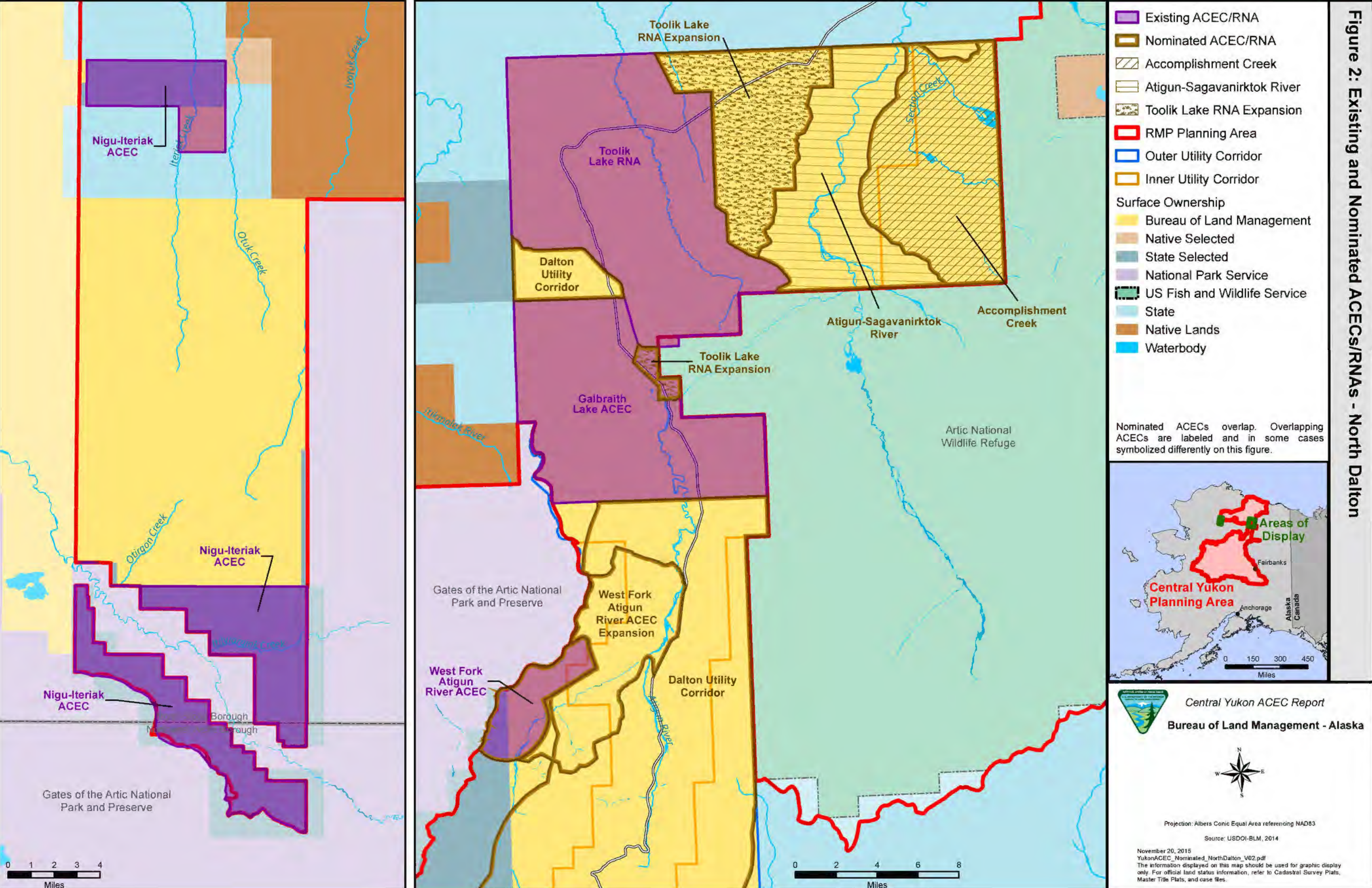
Central Yukon ACEC Report
Bureau of Land Management - Alaska

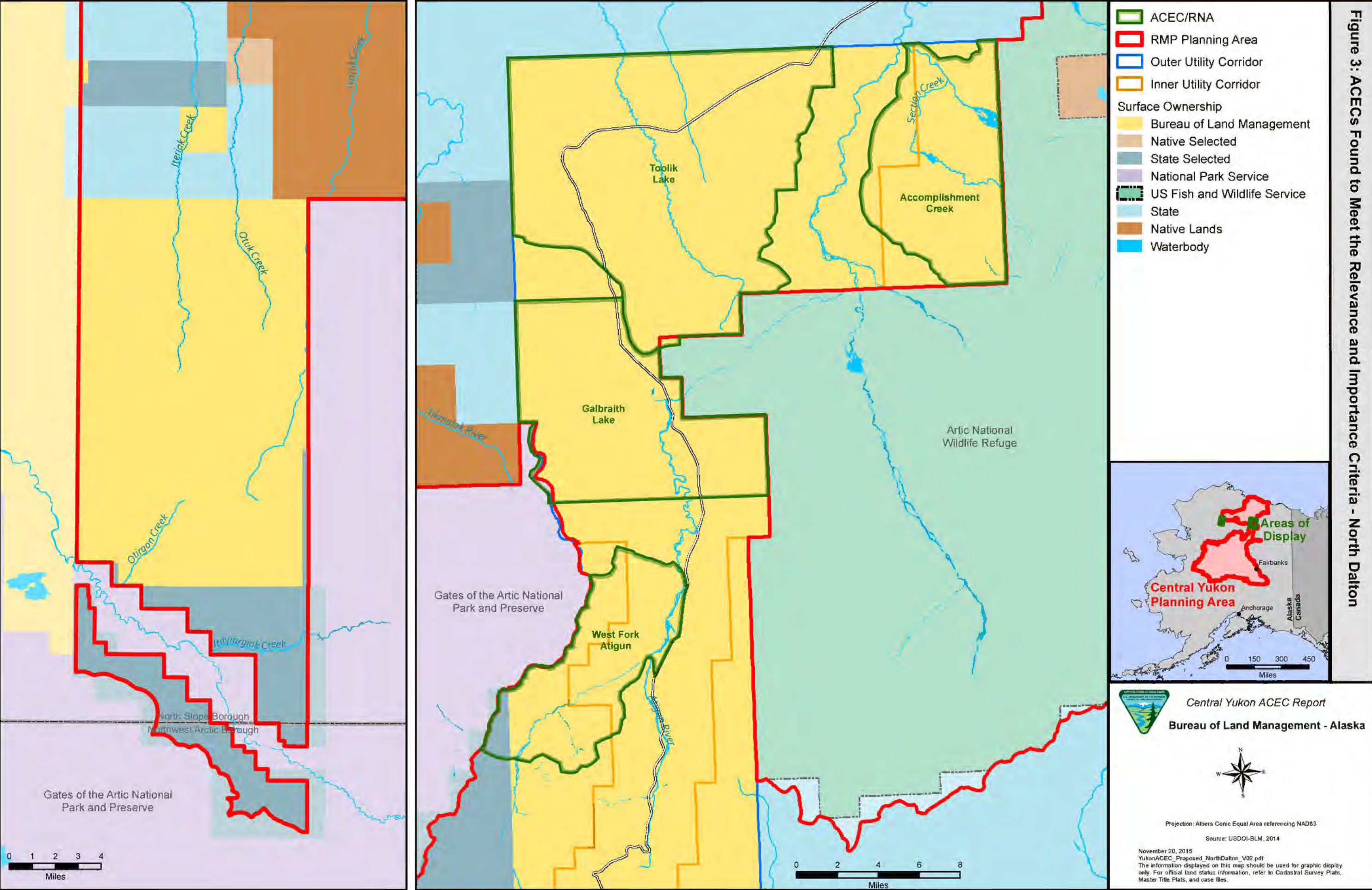
0 12.5 25 50 75 100
Miles

Projection: Albers Conic Equal Area referencing NAD83

Source: USDOI-BLM, 2014

November 20, 2015
YukonACEC_planningarea_locator_V02.pdf
The information displayed on this map should be used for graphic display only. For official land status information, refer to Cadastral Survey Plats, Master Title Plats, and case files.





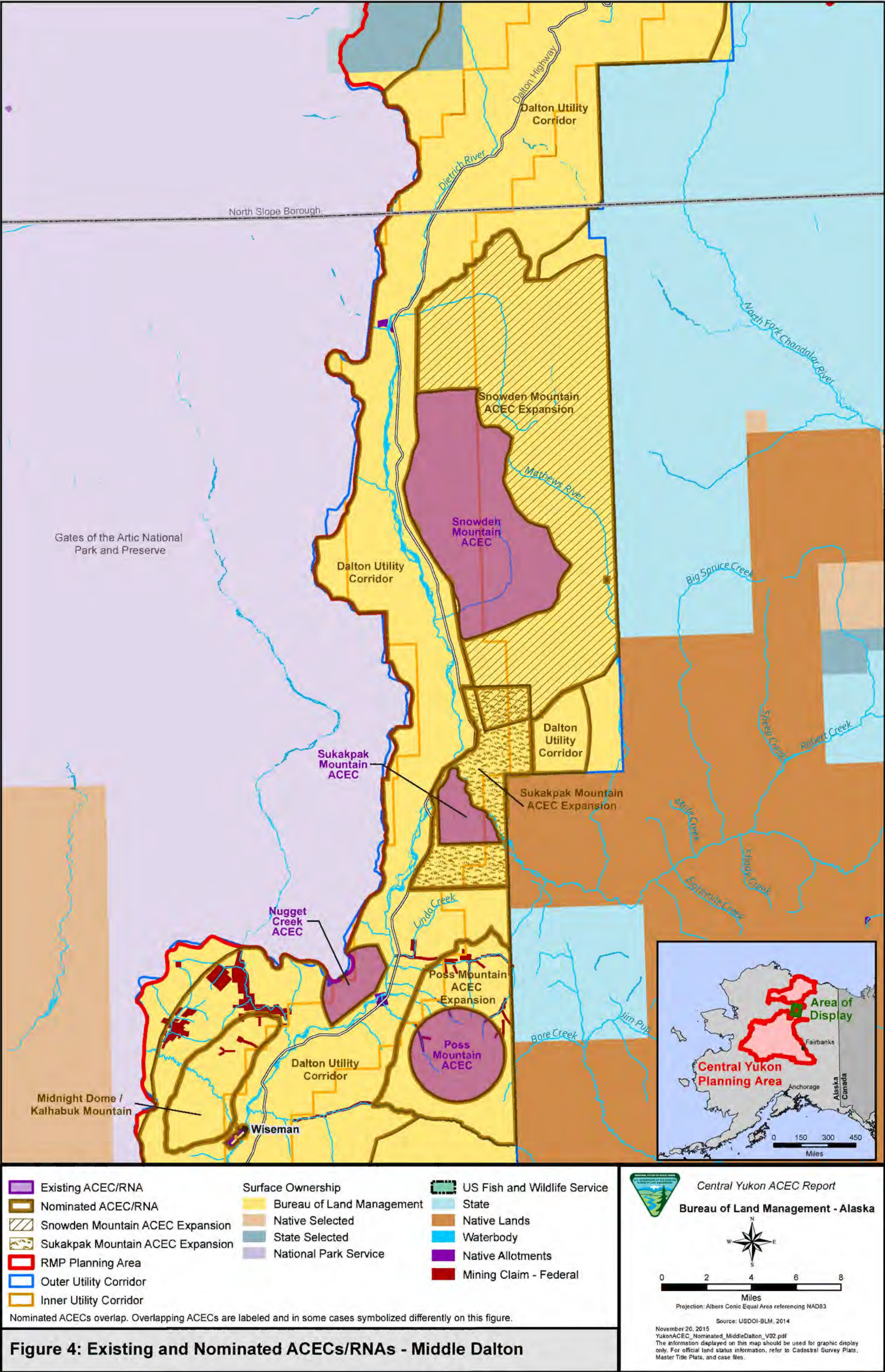
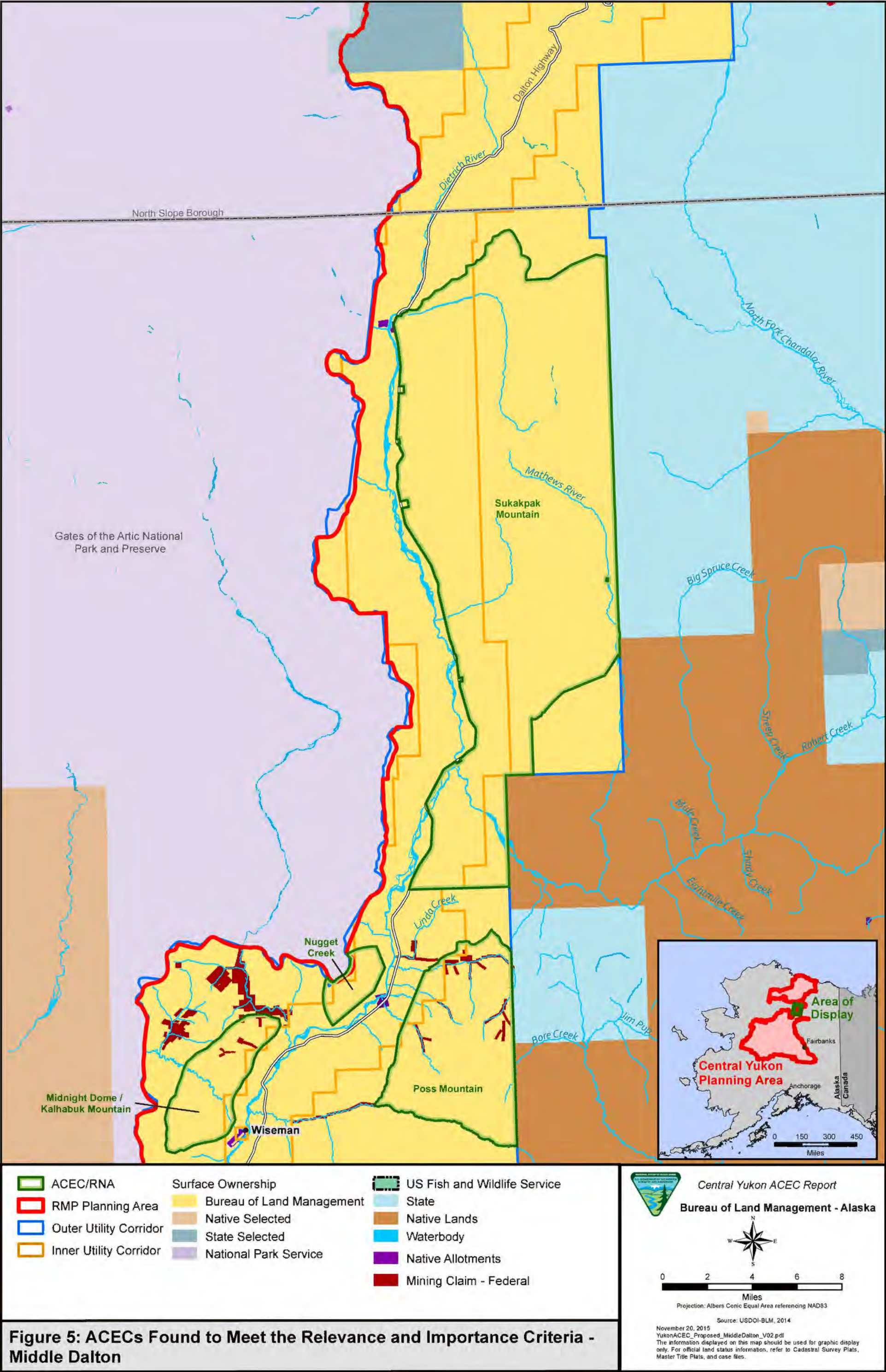
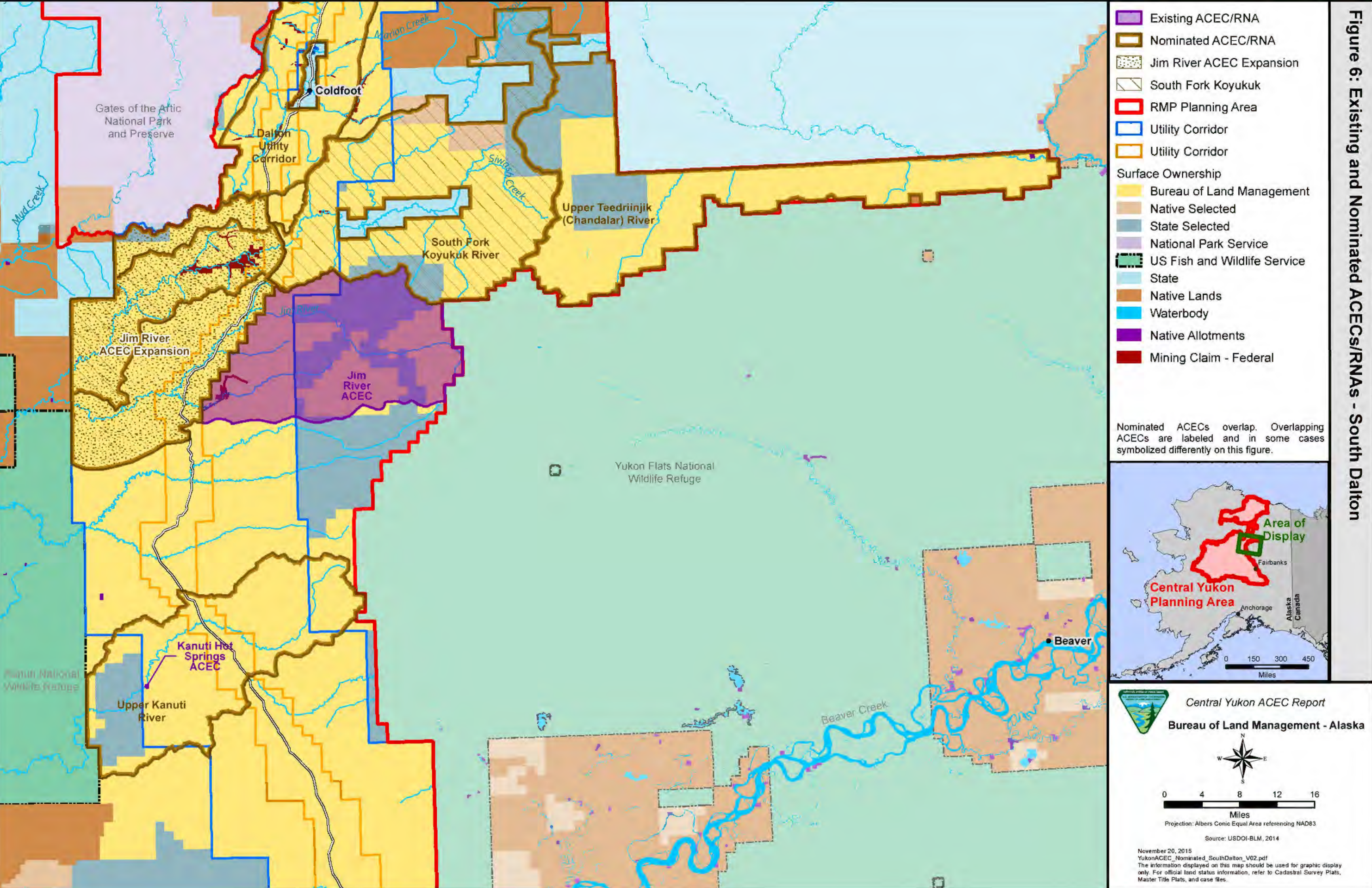
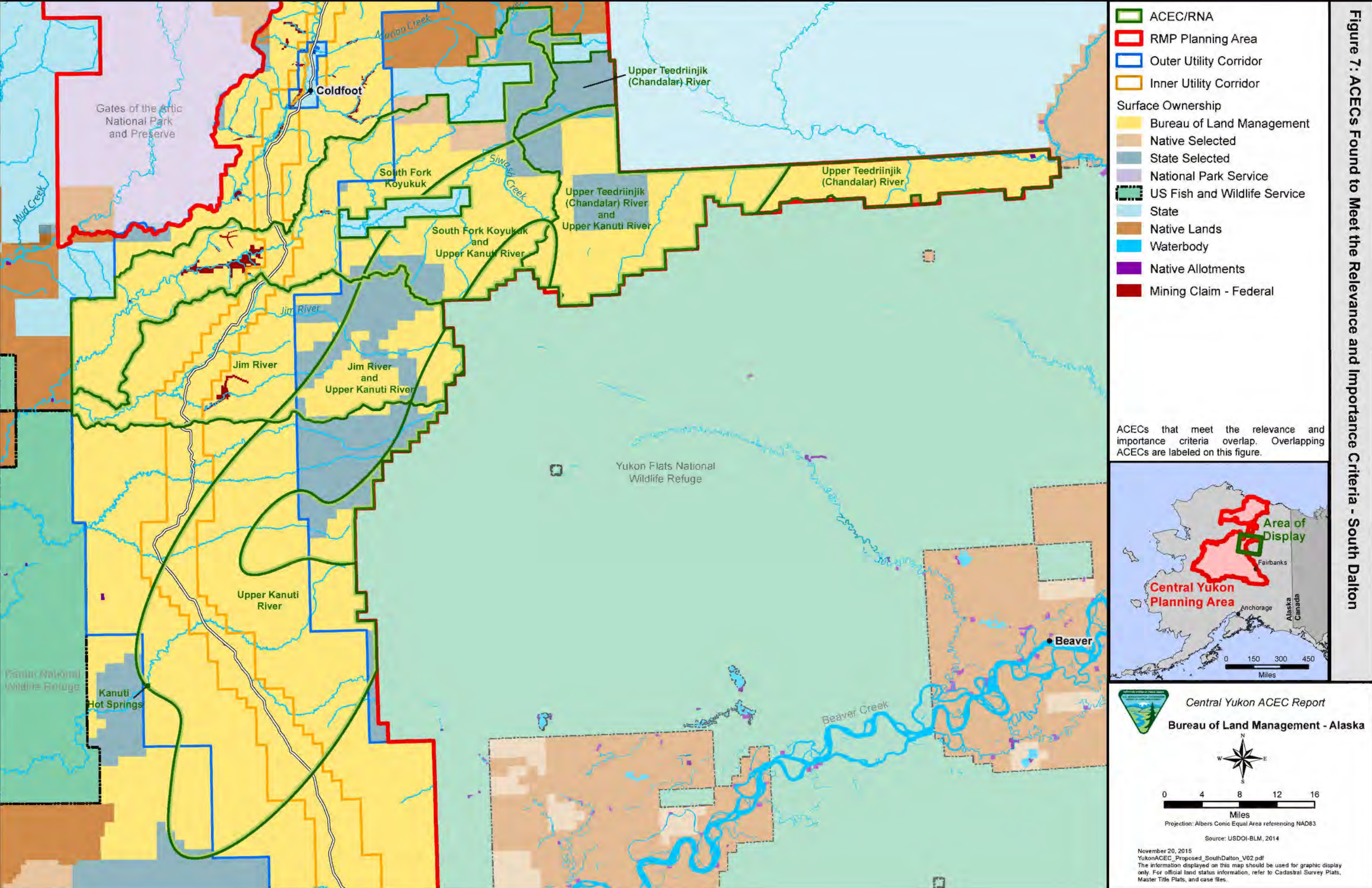


Figure 4: Existing and Nominated ACECs/RNAs - Middle Dalton







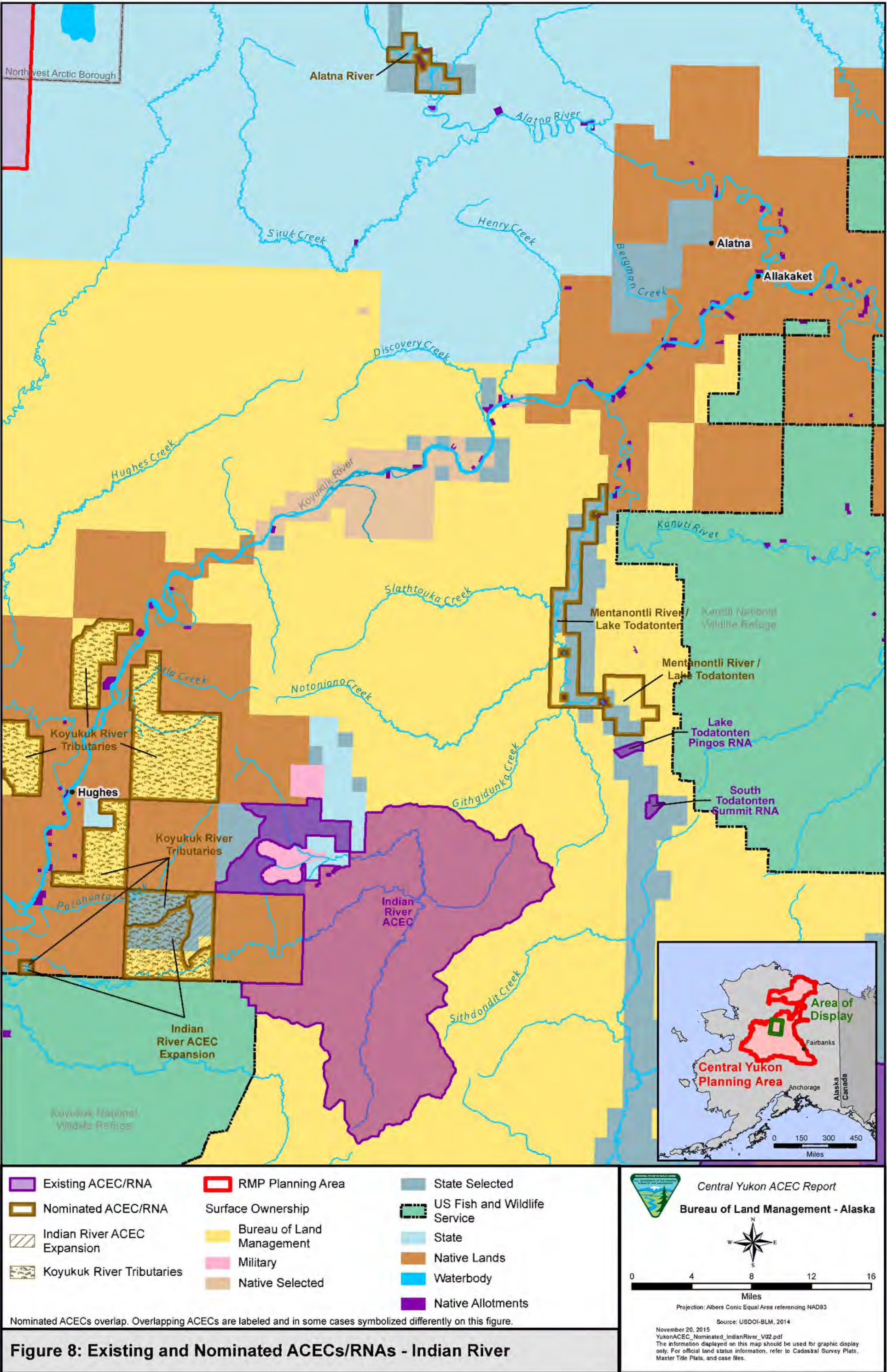
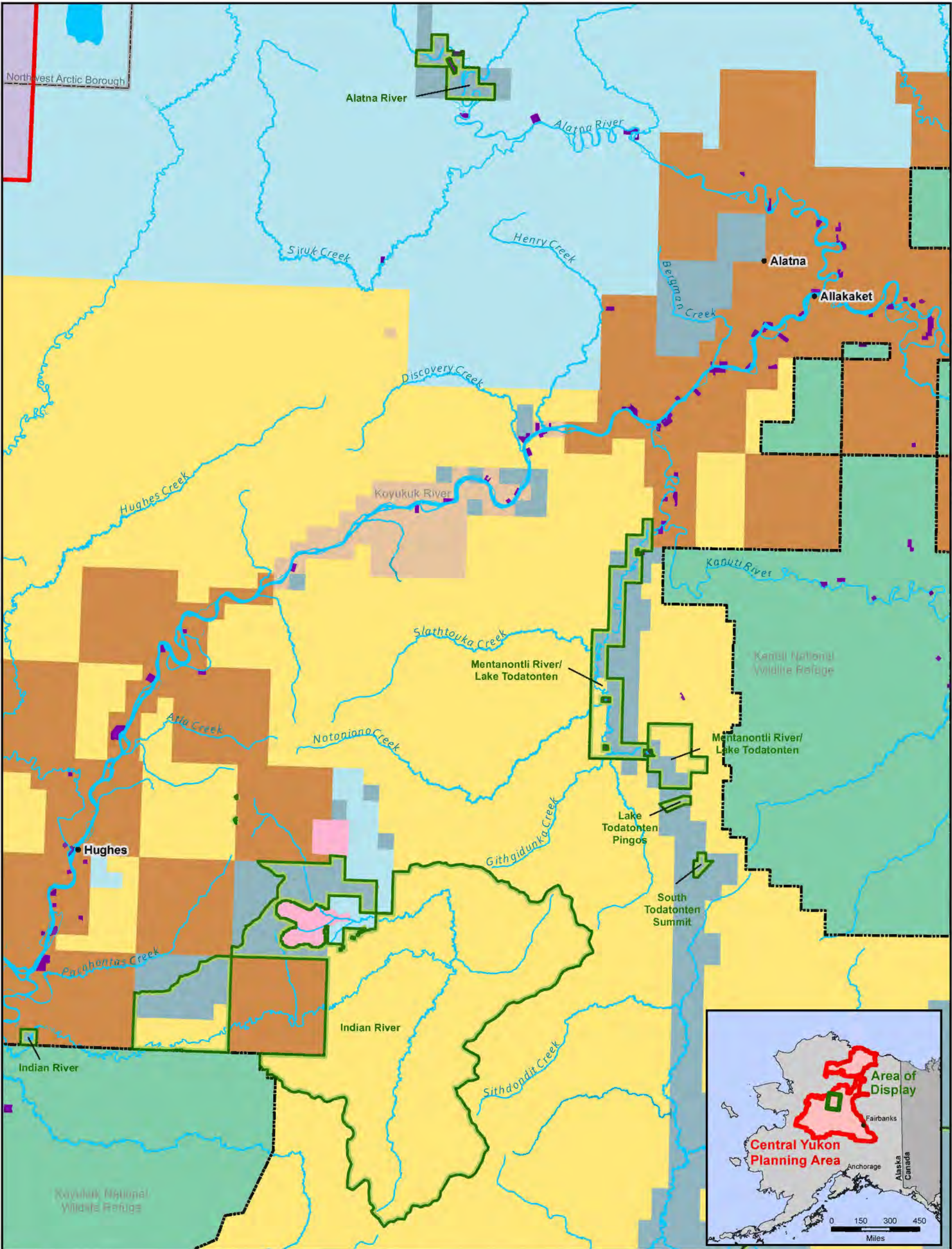
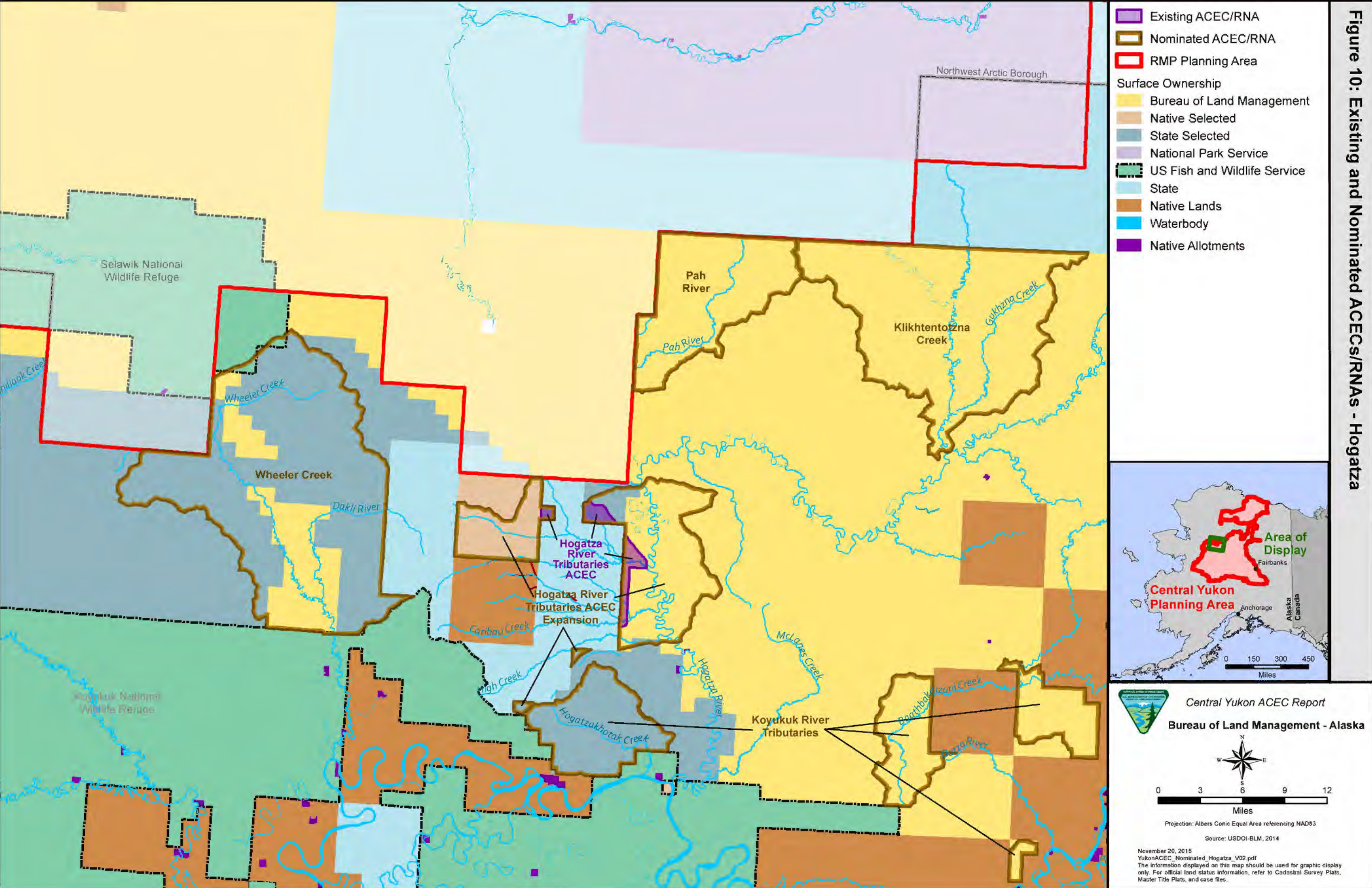
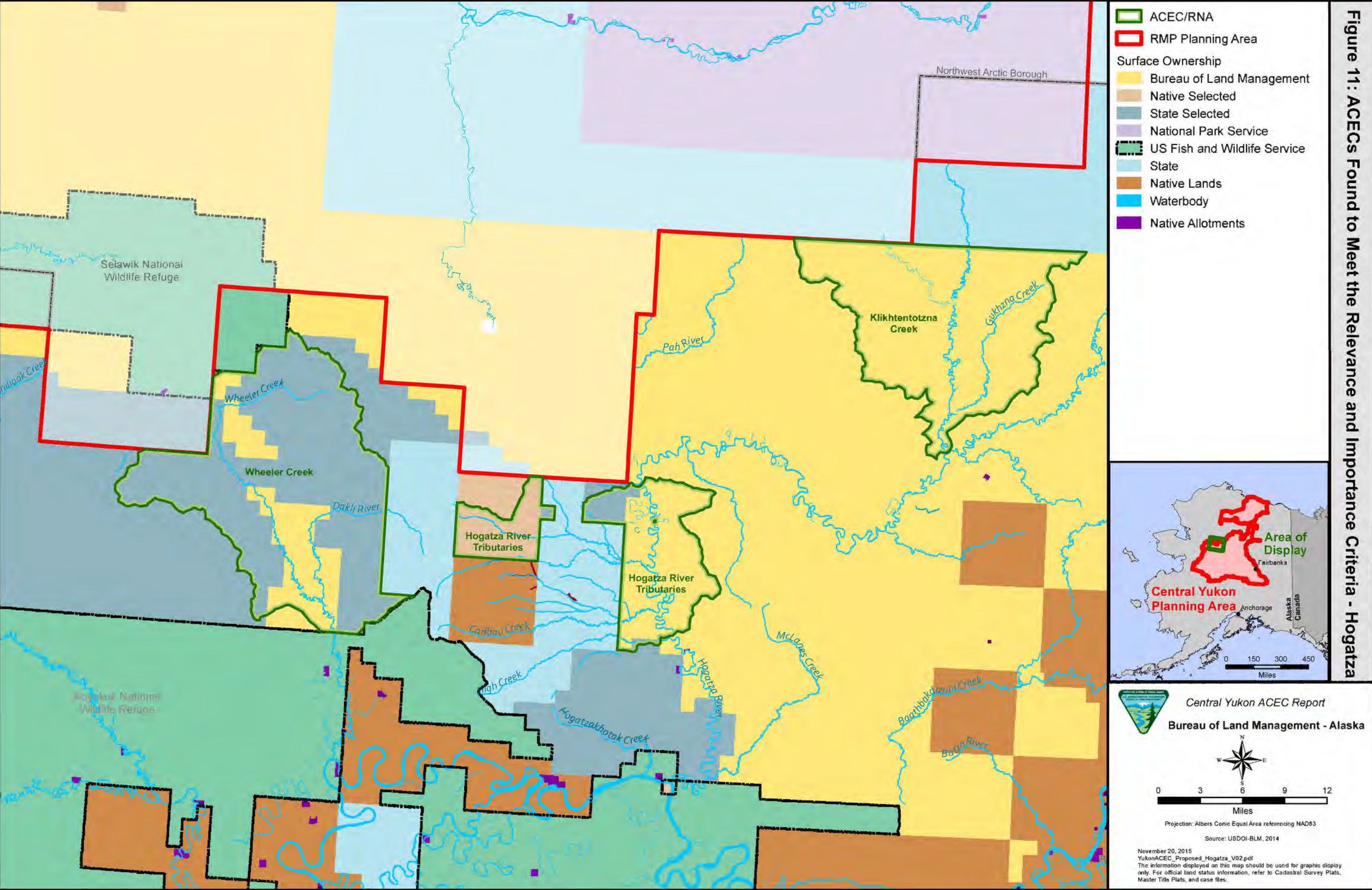


Figure 8: Existing and Nominated ACECs/RNAs - Indian River







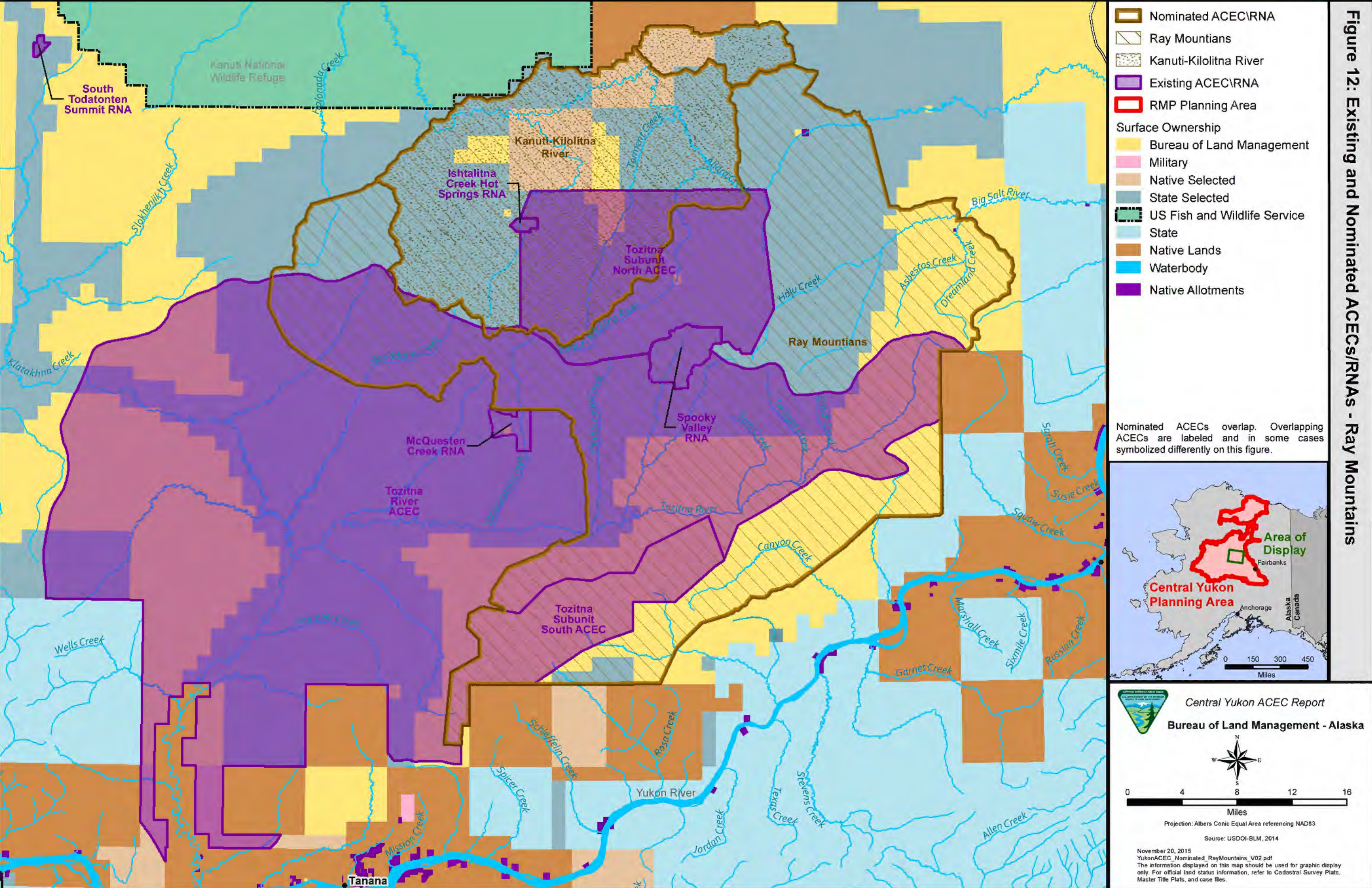
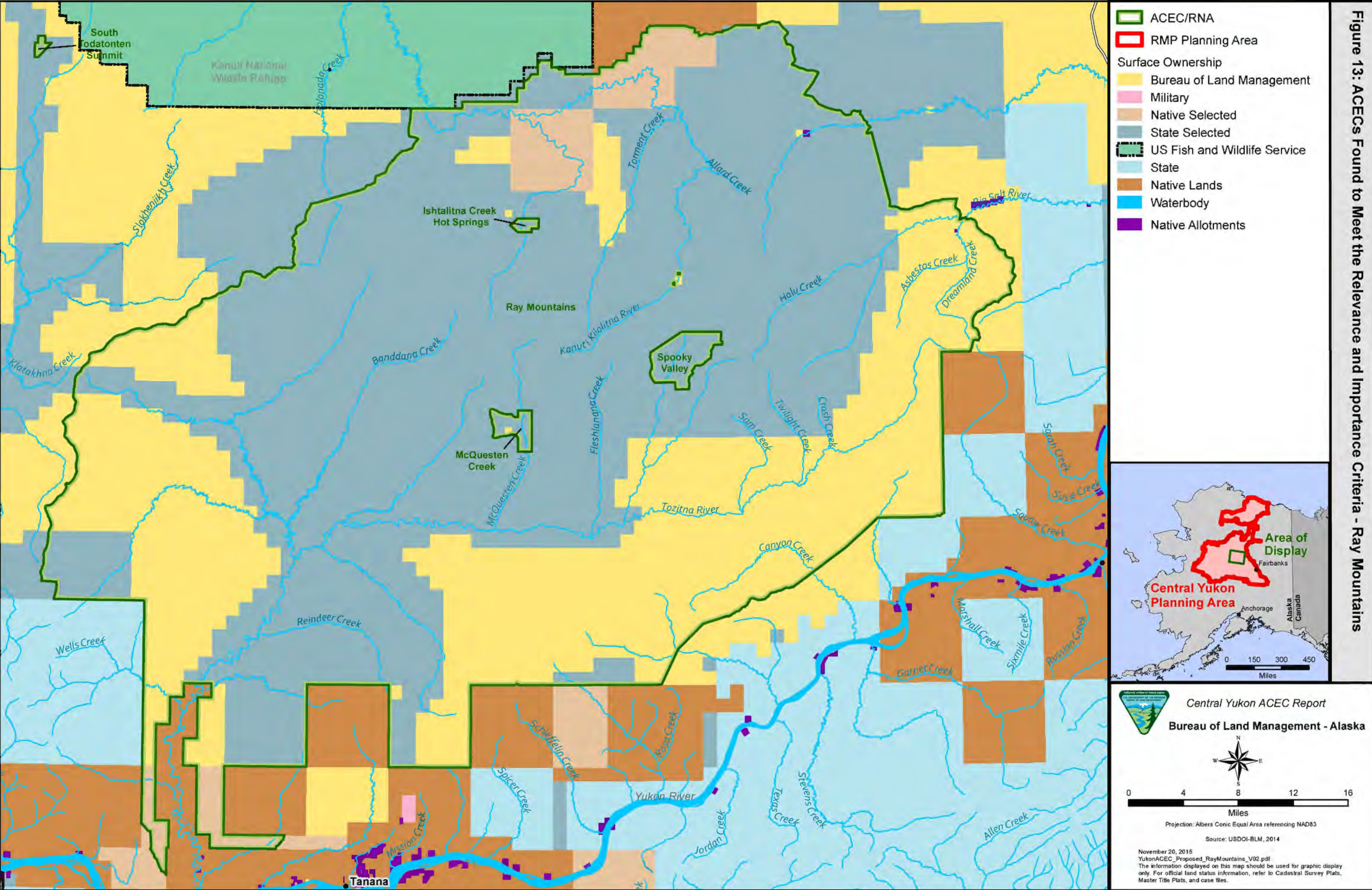
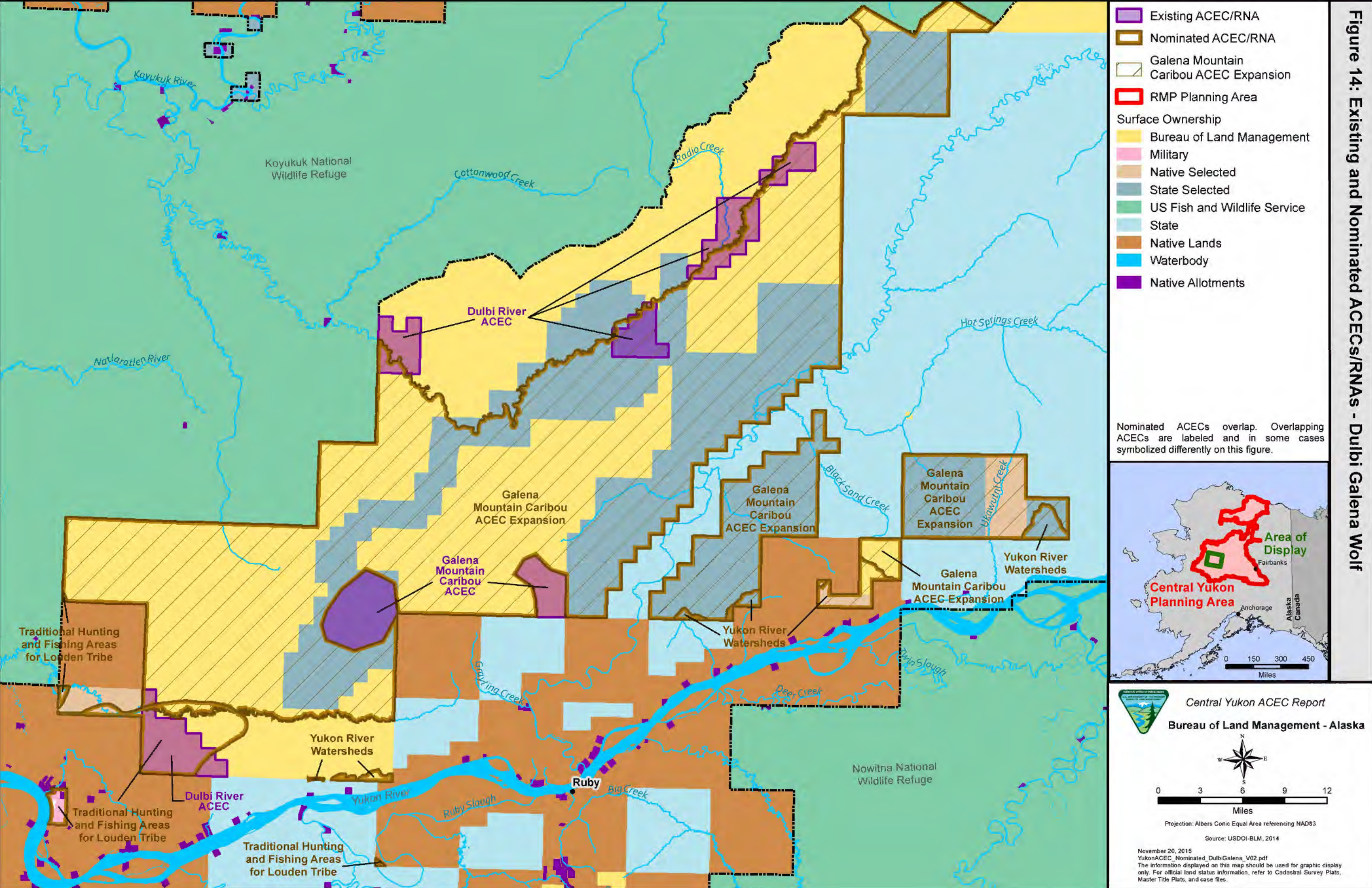


Figure 12: Existing and Nominated ACECs/RNAs - Ray Mountains





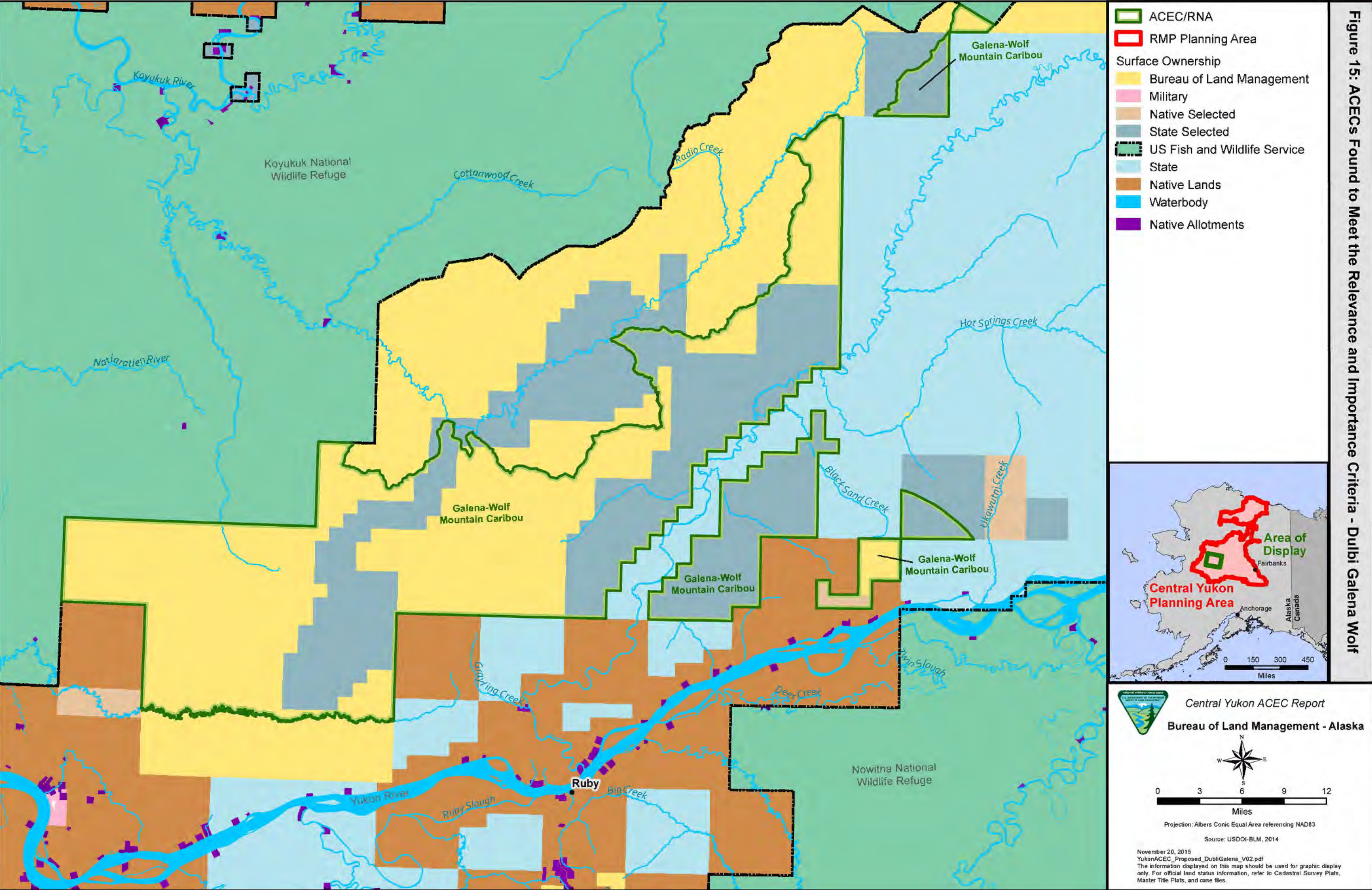


Figure 15: ACECs Found to Meet the Relevance and Importance Criteria - Dubli Galena Wolf

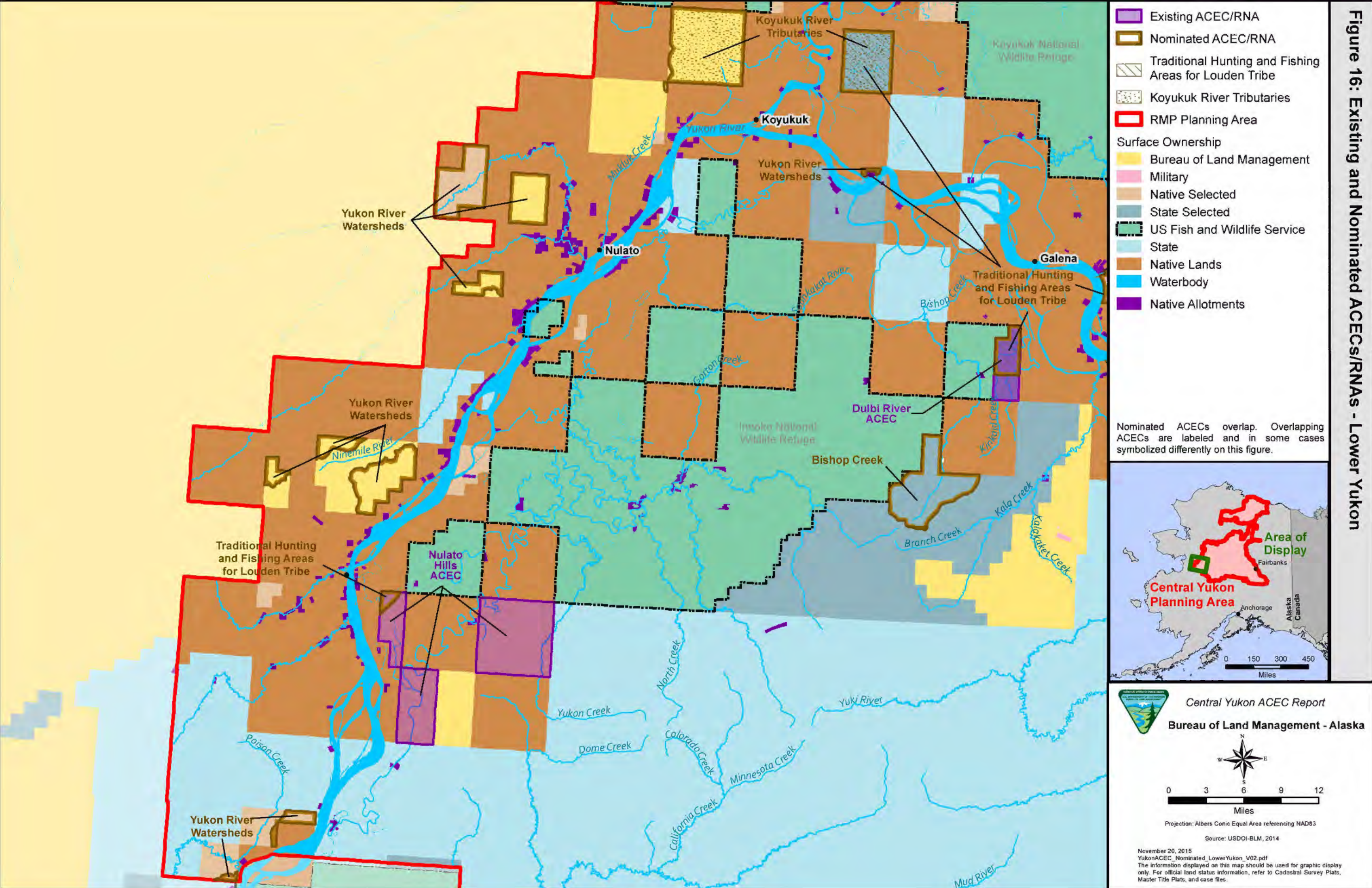


Figure 16: Existing and Nominated ACECs/RNAs - Lower Yukon

Figure 17: Existing and Nominated ACECs/RNAs - Nowitna

Legend:

- Existing ACEC/RNA:** Purple outline
- Nominated ACEC/RNA:** Brown outline
- RMP Planning Area:** Red outline
- Surface Ownership:**
 - Bureau of Land Management: Yellow
 - Native Selected: Tan
 - State Selected: Light Blue
 - National Park Service: Light Purple
- US Fish and Wildlife Service:** Dashed black outline
- State:** Light Blue
- Native Lands:** Brown
- Waterbody:** Blue
- Native Allotments:** Dark Purple
- Mining Claim - Federal:** Red

Map Labels: Nowitna National Wildlife Refuge, Little Mud River, Grand Creek, Big Mud River, Tetsitna-Titna River, Tetsitna River, Titna River, Sethkokna River, Sischu Creek, Lind Creek, Paradise Fork Sethkokna River, Sulukna River, Browns Fork, Granite Creek, Johns Creek, Lake Minchumina, Denali National Park and Preserve, Denali Borough.

Inset Map: Shows the location of the Central Yukon Planning Area (red outline) within Alaska. Labels include Fairbanks, Anchorage, Alaska, Canada, and a scale bar from 0 to 450 miles.

Central Yukon ACEC Report
Bureau of Land Management - Alaska

Scale: 0 4 8 12 16 Miles
 Projection: Albers Conic Equal Area referencing NAD83
 Source: USDOI-BLM, 2014
 November 20, 2015
 YukonACEC_Nominated_Nowitna_V02.pdf
 The information displayed on this map should be used for graphic display only. For official land status information, refer to Cadastral Survey Plats, Master Title Plats, and case files.

